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Economic Brief with Respect to the
Proposed Milk Marketing Agreement and Proposed Order
for the
Kansas City, Missouri, Marketing Area

by

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Introduction

This proposed marketing agreement and proposed order relative to the regulating of the handling of milk in the Kansas City, Missouri, Marketing Area has for its purpose the increasing of returns to producers in accordance with the policy of the Agricultural Adjustment Act, as amended. It is thought that this increase to the producers can be obtained mainly through the more efficient and stabilized marketing conditions created by the provisions of this proposed marketing agreement and proposed order. The main provisions are as follows:

1. The classification of milk into three types of uses.
2. The fixing of the price for one class and the method for fixing the price for the other two classes.
3. The equitable apportionment of the proceeds of milk to all producers by the pooling of all proceeds of milk of all handlers and the payment to producers according to a base-rating plan.

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PART I

The Economic Emergency with Respect to Milk Producers in the States which Supply Milk to the Kansas City, Missouri, Marketing Area

The milk supply of the Kansas City Marketing Area is produced in two States, Missouri and Kansas. 1/

From 1929 to 1933 the prices 2/ received by farmers in these States for milk sold wholesale declined steadily. (See Table 1.) In 1933 the average farm price of milk sold wholesale was 50.7 percent and 41.9 percent lower than in 1929 in Missouri and Kansas, respectively. While prices received by farmers for milk sold at wholesale in these States declined in this way, the prices paid by farmers for commodities bought declined to a much lesser extent, the index of such prices dropping from 164.7 (1910-1914 = 100) in 1929 to 115.7 in 1933, a decline of only 29.8 percent. (See Table 1.) Thus there was a marked decline in the purchasing power of milk sold wholesale by farmers during the period 1929 to 1933 since the farm price of milk sold wholesale declined more rapidly and to a greater extent than the prices paid by farmers for commodities bought.

Between 1929 and 1933 the gross income from milk produced on farms 3/ dropped 45.6 percent in the United States, 48.3 percent in Missouri, and 47.5 percent in Kansas. (See Table 2.)

Cash income from dairy products sold from farms 4/ during this same period dropped 46.5 percent in the United States, 49.0 percent in Missouri, and 47.6 percent in Kansas. (See Table 3.)

The foregoing facts and considerations demonstrate conclusively that, in the two States which supply milk to the Kansas City, Missouri, market, during the period 1929 to 1933 there was a marked decline in (1) the prices received by producers for milk sold wholesale, (2) the purchasing power of such milk, (3) the gross income from milk produced on farms, and (4) the cash income from dairy products sold from farms.

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- 1/ For details with respect to the proportion of the total supply of milk for Kansas City which is furnished by each State, see Part IV.
- 2/ It can be seen in Figure 1/ (p.23) that the prices paid for milk in these two States in 1929 were not abnormally high.
- 3/ Calculated by multiplying the estimated quantity of milk produced less milk fed to calves by the average value per 100 pounds. It includes the value of milk, cream, and butter consumed in the household on the farms where produced.
- 4/ Computed by adding together the estimates of receipts from sales of milk, cream, butterfat, and butter. The income from sales of dairy cattle and calves is not included.

Table 1. Index of prices paid by farmers for commodities bought and wholesale farm price of milk per hundredweight in Kansas and Missouri and percent decline since 1929.

Year and month	Index of prices paid by farmers for commodities bought including taxes 1909-1914 = 100	Farm price of milk sold wholesale per hundredweight in Kansas	Percent decline since 1929	Farm price of milk sold wholesale per hundredweight in Missouri	Percent decline since 1929
	Percent	Dollars	Percent	Dollars	Percent
1929	164.7	2.29	-	2.17	-
1930	157.5	2.20	3.9	1.97	9.2
1931	138.2	1.71	25.3	1.58	27.2
1932	120.2	1.45	36.7	1.07	50.7
1933	115.7	1.33	41.9	1.07	50.7
1934	126.2	1.48	35.4	1.42	34.6
1935					
January	129.0	1.60	30.1	1.55	28.6
February	130.0	1.70	25.8	1.60	26.3
March	130.0	1.70	25.8	1.60	26.3
April	130.0	1.55	32.3	1.60	26.3
May	130.0	1.55	32.3	1.40	35.5
June	130.0	1.55	32.3	1.35	37.8
July	129.0	1.55	32.3	1.50	30.9
August	128.0	1.55	32.3	1.55	28.6
September	126.0	1.55	32.3	1.60	26.3
October	126.0	1.55	32.3	1.65	24.0
November	126.0	1.60	30.1	1.75	19.4
December	126.0	1.65	27.9	1.75	19.4
1936					
January	126.0	1.65	27.9	1.90	12.4
February	126.0	1.75	23.6	1.80	17.1
March	125.0	1.70	25.8	1.75	19.4

Compiled from reports of the Bureau of Agricultural Economics, Division of Crop and Livestock Estimates.

Table 2. Gross income from milk produced on farms in the United States and in specified States supplying milk to the Kansas City Marketing Area, and percentage decline from 1929, in such gross income, 1929--1934.

Year	United States		Kansas		Missouri	
	Gross Income	Percent decline from 1929	Gross income	Percent decline from 1929	Gross income	Percent decline from 1929
	1,000 dollars	Percent	1,000 dollars	Percent	1,000 dollars	Percent
1929	2,322,553	-	54,416	-	66,311	-
1930	2,030,853	12.6	45,601	16.2	56,279	15.1
1931	1,614,394	30.5	38,044	30.1	44,780	32.5
1932	1,260,424	45.7	28,610	47.4	34,502	48.0
1933	1,262,554	45.6	28,578	47.5	34,280	48.3
1934	1,421,253	38.8	31,940	41.3	38,412	42.1

Compiled from reports of the Bureau of Agricultural Economics, Division of Crop and Livestock Estimates.

Table 3. Cash income from dairy products sold from farms in the United States and in specified States supplying milk to the Kansas City Marketing Area, and percentage decline from 1929, in such cash income, 1929-1934.

Year	United States		Kansas		Missouri	
	Cash income	Percent decline from 1929	Cash income	Percent decline from 1929	Cash income	Percent decline from 1929
	1,000 dollars	Percent	1,000 dollars	Percent	1,000 dollars	Percent
1929	1,847,235	-	42,917	-	48,657	-
1930	1,615,363	12.6	36,295	15.4	42,109	13.5
1931	1,278,531	30.8	30,508	28.9	33,403	31.4
1932	985,099	46.7	22,780	46.9	25,148	48.3
<u>1/</u> 1933	988,880	46.5	22,472	47.6	24,835	49.0
<u>1/</u> 1934	1,114,016	39.7	25,104	41.5	27,176	44.1

Compiled from reports of the Bureau of Agricultural Economics, Division of Crop and Livestock Estimates.

1/ Includes benefit payments and Government purchases.

The condition of milk producers in the United States and in these two States had improved somewhat in 1934 and 1935. But in 1934 gross income from milk produced on farms in the United States was still 38.8 percent below that of 1929, while in Kansas and Missouri it was 41.3 percent and 42.1 percent, respectively, below the 1929 level. The farm prices of milk sold wholesale in 1935 in Kansas and Missouri averaged only \$1.50 and \$1.58 per hundredweight in 1935, which are still much below those received in 1929. Thus the dairy farmers in this area have not been fully relieved, and a continuance of a Federal program is necessary.

PART II

The Importance of Dairy Farming as an Agricultural Enterprise in the United States and in the States Supplying Milk to the Kansas City, Missouri, Marketing Area

Some indication of the importance of milk production as an agricultural enterprise in the United States and in the two States, Missouri and Kansas, which supply milk to the Kansas City Marketing Area is given in Table 4. (See also Part VIII.)

This table shows that the sale of dairy products supplied 18.0 percent of farmers' cash income in the United States in 1929, 22.6 percent in 1932, and 17.8 percent in 1934.

In Missouri the sales of dairy products supplied 20.8 percent of farmers' cash income in 1929, 17.0 percent in 1932, and 13.1 percent in 1934. In Kansas the sales of dairy products supplied 10.2 percent of farmers' cash income in 1929, 15.6 percent in 1932, and 11.1 percent in 1934. Regional differences in the importance of dairying in the area about Kansas City are indicated by the fact that the percent of the farms of dairy type 5/ varies from 1.8 percent in Platte County, Missouri, to as high as 17.6 percent in Jackson County, Missouri. Table 21 shows this figure for each of the six Kansas counties and the eight Missouri counties which supply milk to the Kansas City, Missouri, market. On an average, nearly 10 percent of the farms have over 40 percent of their income from dairy products, including the sale of dairy cows and heifers.

The foregoing facts and considerations demonstrate that dairy farming is an important agricultural enterprise in Missouri and Kansas, and that activity pointed toward the enhancement of prices to Kansas and Missouri producers who supply milk to Kansas City is warranted and necessary to effectuate the policy of Congress as stated in the Agricultural Adjustment Act.

5/ Farms are classified into types by the Census of Agriculture for 1930 on the basis of the source of their income from farm products sold, traded, or used by the operator's family. In this classification dairy farms must have over 40 percent of their income from milk, cream, butterfat, butter and dairy cows, and calves.

Table 4. Cash income from all farm products and percentage cash income from dairy products was of cash income from all farm products, 1929 - 1934.

Year	United States		Kansas		Missouri	
	Cash income from total farm production 1,000 Dollars	Percent which cash income from dairy production is of total cash income from farm production	Cash income from total farm production 1,000 Dollars	Percent which cash income from dairy production is of total cash income from farm production	Cash income from total farm production 1,000 Dollars	Percent which cash income from dairy production is of total cash income from farm production
	Dollars	Percent	Dollars	Percent	Dollars	Percent
1929	10,284,479	18.0	418,815	10.2	233,658	20.8
1930	7,987,606	20.2	311,424	11.7	266,046	15.8
1931	5,795,148	22.1	230,430	13.2	196,354	17.0
1932	4,368,296	22.6	146,245	15.6	147,827	17.0
1933 ^{1/}	5,402,094	18.3	172,114	13.1	175,287	14.2
1934 ^{1/}	6,261,123	17.8	225,171	11.1	206,835	13.1

Compiled from reports of the Bureau of Agricultural Economics, Division of Crop and Livestock Estimates.

^{1/} Includes benefit payments and Government purchases.

PART III

Comparison of the Prices Specified in the Proposed Marketing Agreement and proposed Order for the Kansas City, Missouri, Marketing Area with Parity Prices for Milk in the Kansas City, Missouri, Marketing Area

Section 2 of the Agricultural Adjustment Act, as amended, states that it is the declared policy of Congress "(1) Through the exercise of the powers conferred upon the Secretary of Agriculture under this title, to establish and maintain such balance between the production and consumption of agricultural commodities, and such marketing conditions therefor, as will reestablish prices to farmers at a level that will give agricultural commodities a purchasing power with respect to articles that farmers buy, equivalent to the purchasing power of agricultural commodities in the base period; and, in the case of all commodities for which the base period is the pre-war period, August 1909 to July 1914, will also reflect current interest payments per acre on farm indebtedness secured by real estate and tax payments per acre on farm real estate, as contrasted with such interest payments and tax payments during the base period. The base period in the case of all agricultural commodities, except tobacco and potatoes, shall be the pre-war period, August 1909 to July 1914. In the case of tobacco and potatoes, the base period shall be the post-war period, August 1919 to July 1929 . . ."

In section 8c of the Agricultural Adjustment Act, as amended, it is provided that "In connection with the making of any marketing agreement or the issuance of any order, if the Secretary finds and proclaims that, as to any commodity specified in such marketing agreement or order, the purchasing powers during the base period specified for such commodity in section 2 of this title cannot be satisfactorily determined from available statistics of the Department of Agriculture, the base period, for the purposes of such marketing agreement or order, shall be the post-war period, August 1919 to July 1929, or all that portion thereof for which the Secretary finds and proclaims that the purchasing power of such commodity can be satisfactorily determined from available statistics of the Department of Agriculture."

In the case of milk produced for sale in the Kansas City Marketing Area, available statistics in the United States Department of Agriculture with respect to the August 1909 to July 1914 base period are inadequate for the proper determination of an August 1909 to July 1914 base period price for milk. Parity prices for milk sold by producers to handlers in the Kansas City Marketing Area have been determined, therefore, from available statistics in the Department of Agriculture with respect to the period August 1919-- July 1929, inclusive. The

parity prices so determined are shown in Table 5, and indicate that the prices specified in the proposed marketing agreement and proposed order for the Kansas City Marketing Area are within the parity price limits set by the Agricultural Adjustment Act, as amended. As of February 1936, the latest date for which figures are available, the parity price f.o.b. city for Class I milk containing 3.7 percent of butterfat as determined for the Kansas City Marketing Area was \$2.46 per hundredweight.

PART IV

Character of the Commerce in Milk in the Kansas City, Missouri, Marketing Area

The Kansas City, Missouri, Marketing Area, situated on the boundary line between the States of Kansas and Missouri, has, as would be expected, much interstate commerce in the fluid milk industry. Milk is supplied for the marketing area from both States, and handlers operating in the area sell milk in both States. In addition, some handlers handling milk which does not cross State lines mingle such milk with milk which has crossed State lines.

The Bureau of Railway Economics reported in 1933 that 14,559,798 pounds of milk and cream were shipped into the Kansas City, Missouri, market in interstate commerce. The milk and cream originated in the eight States of Alabama, Colorado, Iowa, Kansas, Minnesota, Nebraska, Oklahoma, and Texas. Cheese, butter, and evaporated or condensed milk were shipped into this area in large quantities in interstate commerce. Evaporated milk was shipped in from as far west as California and cheese from as far east as Massachusetts.

Shipments from the Kansas City milk shed in 1933 were also reported by the Bureau of Railway Economics. They amounted to 1,352,823 pounds of milk and cream and over 18 million pounds of butter, cheese, and evaporated and condensed milk. (See Table 6.)

The milk for fluid use in the marketing area is produced in the counties of Johnson, Miami, Wyandotte, and Douglas in Kansas, and the counties of Platte, Clay, Ray, Lafayette, Johnson, Jackson, Cass, and Bates in Missouri. All of the fluid cream used as sweet cream in the marketing area is also produced in these same counties. (See Figure 2, p. 46.)

Some idea of the extent of interstate commerce in milk in the market is also disclosed in the report of the market administrator for the period in which there has been a Federal license in operation in the marketing area. During the history of the Federal program many changes have been made in the number of handlers who were required to report and also a change in the definition of the marketing area. Hence in order to determine approximately the amount of milk which was handled during the period of the License in the marketing area as now defined, an estimate

Table 5. KANSAS CITY:

Index of prices paid by farmers for commodities bought, index of seasonal variation, prices paid by dealers for Class I, milk per hundredweight and parity adjusted for seasonal variation, average August 1919 - July 1929, by years, 1930-1935 and by months, 1936.

Year and month	Index of prices paid by farmers for commodities bought	Index of seasonal variation West North Central Section	Price per cwt. of 3.8% Class I milk	Parity adjusted for seasonal variation
	Percent	Percent	Paid by dealers ^{1/}	Dollars
Average, Aug. 1919 - July 1929	100.0		Dollars <u>3.162^{1/2}</u>	
1930	90.4		3.03 ^{3/4}	2.86
1931	77.3		2.82 ^{3/4}	2.44
1932	66.7		2.21 ^{3/4}	2.11
1933	68.0		2.12 ^{3/4}	2.15
1934	76.7		2.07	2.42
1935	78.0		2.25	2.46
1936				
January	76.1	103.2	2.15	2.48
February	76.1	102.2	2.15	2.46
March	75.5	100.9	2.15	2.41
April		99.0		
May		97.1		
June		96.0		
July		96.5		
August		97.7		
September		99.5		
October		101.3		
November		103.0		
December		103.6		

^{1/} License price used from April 1934 on. Includes premium after August 1934.

^{2/} Calculated by applying the ratio between the average wholesale selling price for April 1934 to February 1936, and the average buying price of Class I milk under the license during the same period, to the average wholesale selling price in the base period.

^{3/} Calculated by applying the ratio described in footnote ^{2/} to the average wholesale selling price for each individual year.

Table 6. KANSAS CITY, MISSOURI: Rail shipments of dairy products to and from Kansas City, Missouri by States of origin and destination (excluding Missouri) 1933

State of origin or des- tination	Shipments to the milk shed			Shipments from the milk shed			
	Cheese Pounds	Butter Pounds	Evaporated or conden- sed milk Pounds	Cream, and fluid milk Pounds	Cheese Pounds	Butter Pounds	Evaporated Cream and or conden- fluid sed milk Pounds
Alabama	-	-	-	-	36	156	-
Arizona	-	-	-	-	-	1,350	-
Arkansas	-	428	711	406,243	106,850	17,859	5,105
California	-	-	14,183	-	-	-	-
Colorado	24,719	2,560	-	2,738	294	140	-
Conn.	-	-	-	-	-	112,639	-
Delaware	-	-	-	-	-	-	61,269
Florida	-	-	-	-	-	36,325	72,559
Georgia	-	-	-	-	915	-	-
Illinois	358,402	43,646	254,770	-	72	42,890	-
Indiana	-	-	57	-	4,097	4,540,209	112,452
Iowa	4,072	124,072	2,380,069	40	-	38,037	72,614
Kansas	20,332	89,885	1,582,458	10,558,471	332	63,420	35,026
Kentucky	-	-	-	-	725,262	60,270	1,571
Louisiana	-	-	-	-	-	-	-
Maryland	1,226	-	-	-	1,061	-	-
Mass.	904	-	-	-	-	1,982	-
Michigan	-	-	-	-	100	2,966,371	72,390
Minnesota	558,754	1,000	933,857	83	-	21,000	-
Nebraska	29,316	20,790	4,747	29,700	-	36,213	56,280
N. H.	-	-	-	-	185	-	38,913
N. J.	35,967	-	-	-	3,669	347,089	73,663
New Mexico	-	-	-	-	-	330	257,310
New York	147,338	-	-	-	241	29,813	-
Ohio	535	-	3,309	-	134	213	-
Oklahoma	1,049	-	-	-	426	4,005,067	-
Pa.	-	-	-	3,011,599	95,384	7,484	72,919
R. I.	-	-	-	-	324	10,314	2,740
S. Dakota	-	-	-	-	-	1,964,658	42
					695	275,092	457,359
						39	-

Table 6 (Continued).

KANSAS CITY, MISSOURI: Rail shipments of dairy products to and from Kansas City, Mo.
by States of origin and destination (excluding Missouri) 1933.

State of origin or des- tination	Shipments to the milk shed					
	Cheese		Butter		Shipments from the milk shed	
	Pounds		Pounds		Butter	Evaporated Cream and or condensed fluid milk
					Pounds	Pounds
Tenn.	136					
Texas			702			
Virginia				74		
Washington						
W. Va.						
Wisconsin	4,176,230		1,224	4,217,559		
Wyoming						
D. C.						
Total	5,358,980	264,307	9,391,794	14,559,798	956,450	15,548,755
					1,647,418	1,352,823

Compiled by the Bureau of Railway Economics

was made by adding to the current reports made by handlers the amount of milk handled by handlers who did not report and subtracting that milk which was reported by handlers who are not now required to report due to the change in the definition of the marketing area. The adjustments were made on the basis of the reports made by handlers in previous periods.

During the year 1935 there were purchased by handlers in the Kansas City, Missouri, Marketing Area 132,825,000 pounds of milk. Of this amount 37,702,000 pounds, or 28.4 percent, was produced in the State of Kansas and 95,123,000 pounds, or 71.6 percent, in the State of Missouri. (See Table 7.)

Some handlers purchasing milk from producers purchased milk from producers located in Missouri as well as from producers located in Kansas. In the marketing area it has been the custom to bring all milk to the market for pasteurization as fluid milk. Hence, these handlers actually mixed milk purchased in Missouri with milk which had crossed State lines. The purchases of such handlers from producers in Missouri amounted to 20,148,000 pounds, or 15.2 percent, of all the milk in the marketing area and 21.2 percent of all the milk produced in the State of Missouri for sale in the marketing area.

Included in the total estimated milk in the marketing area was the milk produced and distributed by producers. There are over 200 of such producer-handlers who handled 57,984,000 pounds, or 43.6 percent of the milk in the market. 19,776,000 pounds of milk, or 14.9 percent of all the milk in the market, was produced by 81 such producer-handlers in Kansas and sold in the marketing area.

Thus, of all the milk in the marketing area 43.6 percent crosses State lines on its route to market or is actually mixed with milk which has crossed State lines. Some handlers purchasing milk from Missouri producers sell milk as fluid milk, cream, or other dairy products in other States and in this way are engaged in interstate commerce.

Some milk produced in the State of Missouri never leaves the State nor comes in physical contact with milk which has been produced in other States or with milk which is produced for sale in other States. But the economic boundaries of a marketing area have no relation to the political boundaries, and the provisions of a marketing agreement and order are based on economic boundaries and not those established by civil subdivisions.

Section 8c (1) of the Agricultural Adjustment Act, as amended, provides that: "The Secretary of Agriculture shall, subject to the provisions of this section, issue, and from time to time amend, orders applicable to processors, associations of producers, and others engaged in the handling of any agricultural commodity or product thereof specified in subsection (2) of this section. Such persons are

Table 7. Purchases of milk according to origin by handlers in the Kansas City Marketing Area, and number of handlers making such purchases, April 1934 - December 1935

	Missouri handlers who purchase in Kansas and Missouri				Missouri handlers who purchase in Missouri only				Missouri handlers who distribute in Kansas City, Missouri, only.				Missouri handlers who distribute in Kansas City, Missouri only				Estimated total milk purchased by all handlers operating in the Kansas City Missouri market			
	% of total milk purchased		% of total milk purchased		% of total milk purchased		% of total milk purchased		% of total milk purchased		% of total milk purchased		% of total milk purchased		% of total milk purchased		% of total milk purchased		% of total milk purchased	
	No.	1,000 pounds	No.	1,000 pounds	No.	1,000 pounds	No.	1,000 pounds	No.	1,000 pounds	No.	1,000 pounds	No.	1,000 pounds	No.	1,000 pounds	No.	1,000 pounds	No.	1,000 pounds
1934																				
April	6	1,572	12.7	1,696	10	4,279	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
May	6	1,771	13.3	1,787	10	4,891	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
June	6	1,626	12.9	1,803	10	4,297	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
July	6	1,537	12.6	1,881	9	4,075	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
Aug.	6	1,502	13.1	1,743	9	3,422	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
Sept.	7	1,443	13.0	1,944	9	2,919	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
Oct.	7	1,603	13.8	1,902	9	3,286	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
Nov.	7	1,592	14.1	1,666	9	3,182	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
Dec.	7	1,430	13.7	1,546	9	2,655	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
Total		14,131	13.3	15,968		33,006		14,832		28,656		28,656		28,656		28,656		28,656		28,656
1935																				
Jan.	7	1,519	14.4	1,589	9	2,589	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
Feb.	7	1,398	13.8	1,476	9	2,400	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
Mar.	7	1,586	14.0	1,870	9	3,030	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
Apr.	7	1,691	13.9	2,050	9	3,600	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
May	7	2,128	16.4	1,801	8	4,191	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
June	6	1,679	14.4	1,724	9	3,429	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
July	6	1,471	12.9	1,882	9	3,222	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
Aug.	5	1,504	12.9	1,909	10	3,405	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
Sept.	5	1,337	12.2	1,705	10	3,119	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
Oct.	5	1,223	12.0	1,470	9	2,684	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
Nov.	5	1,122	11.6	1,441	9	2,257	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
Dec.	4	1,268	12.5	1,229	8	2,841	81	1,648	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184	141	3,184
Total		17,926	13.5	20,148		36,767		19,776		38,208		38,208		38,208		38,208		38,208		38,208

Compiled from the annual report of the Market Administrator, License No. 40

referred to in this title as 'handlers'. Such orders shall regulate, in the manner hereinafter in this section provided, only such handling of such agricultural commodity, or product thereof, as is in the current of interstate or foreign commerce, or which directly burdens, obstructs, or affects, interstate or foreign commerce in such commodity or product thereof."

Section 8c (5) (A) of the Agricultural Adjustment Act, as amended, states that: "In the case of milk and its products, orders issued pursuant to this section shall contain one or more of the following terms and conditions, and (except as provided in subsection (7)) no others:

"(A) Classifying milk in accordance with the form in which, or the purpose for which, it is used, and fixing, or providing a method for fixing, minimum prices for each such use classification which all handlers shall pay, and the time when payments shall be made, for milk purchased from producers or associations of producers. Such prices shall be uniform as to all handlers, subject only to adjustments for (1) volume, market, and production differentials customarily applied by the handlers subject to such order., (2) the grade or quality of the milk purchased, and (3) the locations at which delivery of such milk, or any use classification thereof, is made to such handlers."

It has been shown that prices received by producers who produce milk for sale in the Kansas City, Missouri, Marketing Area are below the parity prices which it is declared to be the policy of Congress to secure for producers of agricultural commodities. Furthermore, the prices specified in the proposed marketing agreement and proposed order are higher than producers would receive if the Federal license now in effect were discontinued and no marketing agreement or order made effective.

As was pointed out before, much of the milk in the Kansas City, Missouri, Marketing Area either moves across State lines as milk or cream, or becomes mixed with milk which has crossed State lines. The question as to the degree to which the regulation of commerce in milk as specified in the proposed marketing agreement and proposed order must be extended to the handling of milk that does not move across State lines or does not become mingled with the milk which has moved across State lines obviously depends upon the extent to which the handling of such milk burdens, obstructs, or affects the interstate commerce in milk in the Kansas City, Missouri, Marketing Area.

The proposed marketing agreement and proposed order fixes the prices which handlers shall pay for milk purchased from producers or associations of producers, and the prices fixed are considerably higher

than those that would prevail if there were no Federal license in effect and there were no marketing agreement or order in effect. If prices were fixed with respect to that milk which moves across State lines or becomes mingled with milk which has moved across State lines, and were not fixed for milk that did not move across State lines or become mingled therewith, it would be impossible for any marketing agreement and order to raise prices to producers and to effectuate the policy of Congress as stated in the Agricultural Adjustment Act.

The reason for this is that, with prices fixed by the marketing agreement and order for some milk, above what would be the case otherwise, it would be to the interest of handlers to change their sources of supply in order to procure milk with respect to which prices were not fixed, i.e., milk not moving across State lines or becoming mingled therewith, which would probably sell at prices lower than the high level of prices set in the proposed marketing agreement and proposed order. This is especially so under the plan set up in the proposed marketing agreement and proposed order in which some of the surplus is spread over all producers. A handler buying milk in Missouri only could buy milk at a price which handlers complying with the marketing agreement and order would be paying their producers, which would be a combination of fluid price and excess price, but sell all their milk as fluid milk. In this way they would receive some milk at excess prices even though they sold it as fluid milk at fluid milk prices. Thus, not only would a larger volume of milk moving across State lines or becoming mingled therewith be sold at excess prices, but the prices received by farmers in other States would be lowered and some of them would probably be left without any market for their milk.

It is obvious that the competition between milk from different sources would bring about the results set forth in the preceding paragraph. Handlers who handle milk in the Kansas City, Missouri, Marketing Area have not priced milk differently to different producers in the past in accordance with the State of origin of the milk. Thus, except for location adjustments which apply to all producers and which are determined on the basis of the distance the milk producer is from the market and not on the basis of the State in which the producer resides, this same plan is proposed in the proposed marketing agreement and proposed order. The principal cooperative in the market has made no distinction between milk produced in different States in its bargaining with handlers. The prices to be paid its producers by handlers are quoted on the basis of miles from the marketing area and not by States.

The foregoing facts and considerations demonstrate conclusively that much of the milk handled in the Kansas City, Missouri, Marketing Area actually moves across State lines or is directly mingled with milk which has moved across State lines, and that, in order to regulate the handling of such milk so as to effectuate the policy of Congress as stated in the Agricultural Adjustment Act, the handling of all other milk which is handled in the marketing area must also be regulated in the same manner.

PART IV

The Classification and Prices of Milk Provided by the Proposed Marketing Agreement and Proposed Order

A general discussion of the price structure for milk is set forth in Technical Paper No. 1, published by the Dairy Section of the Agricultural Adjustment Administration. ^{6/} In this paper it is shown that the classified price plan of selling milk to distributors develops from the competition among distributors to secure an even supply of milk, or, rather, a supply of milk that is closely related to such distributors' requirements for milk for their fluid milk trade. This paper also shows how differences in (1) costs of transporting a unit of milk in fluid form and the product equivalent of a unit of fluid milk, and (2) varying sanitation requirements applicable to milk produced for fluid use and milk produced for use in manufactured dairy products, affect the differential between the price of milk used for different purposes.

A. Provisions of the proposed marketing agreement and proposed order.

Three classes of milk are specified in the proposed marketing agreement and proposed order, namely:

Class I - all milk sold or distributed for consumption as milk;

Class II - all milk used by handlers to produce cream (for consumption as cream), flavored milk, creamed cottage cheese, and creamed buttermilk, provided that the milk from which only the skimmed milk is used in the production of the above products shall not be included as Class II milk; and

Class III - all milk sold, distributed, or used in excess of Class I and Class II.

The area supplying milk to the Kansas City, Missouri, Marketing area is a surplus area, i.e., more than enough milk is produced in the area than is necessary to meet the demand for fluid milk and cream in the marketing area. Hence, more than two classes of milk are necessary

^{6/} E. W. Gaumnitz and O. M. Reed, The Price Structure for Milk, Technical Paper No. 1, Dairy Section, A.A.A., U. S. D. A. (Appendix A.)

in order that the market will have enough milk to take care of the daily fluctuations in the need for Class I and II milk. This excess milk, even though of sufficiently high quality to be used as Class I and Class II, must compete for a market in which a lower quality of milk can be used.

The classification and prices provided in the proposed marketing agreement and proposed order relative to milk produced for sale in the marketing area appear reasonable in light of the facts that are available relative to supply and demand conditions and to the sales and uses of milk in the Kansas City, Missouri, Marketing Area. Such facts are set forth in detail in the following discussion.

B. Use classification.

Classification of milk according to use has been an established practice in the marketing area since 1931, at which time there were four classes of milk established:

- Class 1 - fluid milk sales;
- Class 2 - milk used for fluid cream;
- Class 3 - milk used in manufacturing equal to remainder of the basic milk; and
- Class 4 - all milk over basic milk.

This classification plan was obviously closely related to a base surplus plan in effect in the market. There were actually only three classes of milk according to the use made of the milk, namely, (1) milk used for fluid milk, (2) milk used for fluid cream, and (3) all other milk. These same three classes of milk were adopted in the Federal license which was made effective March 16, 1934. The essentials of these same classes, with some amendments, have continued in effect since that date and are provided for in the proposed marketing agreement and proposed order.

Milk sold for fluid consumption in the Kansas City, Missouri, Marketing Area must meet rigid health standards and must be produced under conditions which conform to the quality standards laid down by the Kansas City health authorities. (See Part VII) Not only must such milk be of these high quality standards but it must have certain other characteristics of production. It must be of a fairly even supply to meet the even demand for it because fluid milk cannot be stored as can other dairy products. It must be produced near the market so that it is easily available to the market in all kinds of weather and also because of the expense of transporting milk long distances. These characteristics justify classifying such milk separately as Class I.

Milk sold for consumption as cream must also be produced under strict sanitation regulations and must meet high quality standards set up by the health authorities. However, cream can be stored for short periods of time without deteriorating and, hence, need not be produced in quite so even a supply as is needed for fluid milk. It can also be produced at longer distances from the market. The health requirements state also that "milk or cream used in the production of buttermilk shall be of such quality that when fresh it could be sold as Grade A Pasteurized or Grade B Pasteurized" milk. In practice, milk used for flavored milk and creamed cottage cheese has also had to meet the same quality and production requirements as milk sold for consumption as cream. All these uses named under Class II milk require about the same type of supply so that their supplies are interchangeable and thus necessitate one class for all such milk.

In order that the market shall at all times have a sufficient quantity of milk for Class I and Class II needs, an additional supply of milk of the same quality must be produced to take care of daily and seasonal fluctuations in the demand. Although such excess milk is of the same high quality, it must compete on the market, if not sold as Class I or Class II, with milk for those manufactured products which do not require a high quality of milk. Hence, such milk must be classified separately with a price in line with the price for alternative uses. These alternative uses, therefore, are the determining factors in the market value of that portion of the Kansas City milk supply which is not used as Class I and Class II.

During the year 1935 the percentage of all milk used as Class I varied from 73.0 percent in November to 41.4 percent in May. The percentage of milk used as Class II varied from 31.9 in December to 23.7 in May. The percentage of Class III milk varied from .6 percent in November to 34.9 percent in May. (See Table 8.)

These wide variations in percentages used in each class arise from the fact that the amount consumed as fluid milk does not fluctuate to the same extent as production. The demand for fluid milk being inelastic, even a sharp drop in the price would not increase consumption to any marked degree, while a rapid rise and fall in the price might upset the market with no gain to either consumers, producers, or handlers.

C. Minimum prices to be paid producers.

The minimum price for Class I milk, according to the terms of the proposed marketing agreement and proposed order for milk, delivered from the producer's farm to the plant of a handler located not more than thirty miles from the City Hall in Kansas City, is \$2.00 per hundredweight. For milk delivered from producers' farms to the plant of handlers located more than thirty miles from the City Hall in Kansas City, the price proposed for Class I milk is \$2.00 per hundredweight,

Table 8. Net reported sales of Class I, II, and III milk and percentage of total sales in the Kansas City Marketing Area, April 1934 to February 1936

Year and month	Handlers reporting	Class I		Percentage of total sales		Class II		Percentage of total sales		Class III		Percentage of total sales		Total Sales	
		Pounds	Number	Percent	Percent	Pounds	Pounds	Percent	Percent	Pounds	Pounds	Percent	Percent	Pounds	Pounds
1934															
April	23	8,240,614		62.5	24.0	3,170,629	1,776,775							13,188,018	
May	23	8,134,467		58.8	21.0	2,897,023	2,790,746							13,822,236	
June	23	6,276,036		57.3	18.8	2,060,960	2,617,337							10,954,333	
July	22	6,244,349		58.6	20.6	2,191,575	2,210,865							10,646,789	
Aug.	22	4,606,323		56.8	22.6	1,837,048	1,671,286							8,114,657	
Sept.	23	4,416,432		59.5	25.8	1,917,991	1,094,877							7,429,300	
Oct.	23	4,665,272		57.3	25.1	2,043,673	1,430,846							8,139,791	
Nov.	22	4,341,868		55.8	25.7	1,998,397	1,442,643							7,782,908	
Dec.	19	3,518,450		61.7	29.6	1,690,598	496,402							5,705,450	
1935															
Jan.	19	3,725,454		62.5	28.8	1,717,548	520,593							5,963,595	
Feb.	19	3,367,343		61.6	29.9	1,637,530	464,621							5,469,494	
March	19	3,670,143		55.1	28.5	1,893,954	1,091,773							6,055,870	
April	19	3,469,795		45.6	24.4	1,858,395	2,279,603							7,607,793	
May	18	3,473,291		41.4	23.7	1,988,894	2,920,790							8,382,975	
June	18	3,327,917		47.4	27.3	1,916,716	1,773,559							7,020,192	
July	15	3,469,218		52.8	24.2	1,592,297	1,510,965							8,572,500	
Aug.	15	3,522,469		51.7	24.9	1,696,553	1,599,454							6,818,476	
Sept.	15	3,494,304		56.7	29.3	1,801,751	863,849							6,159,904	
Oct.	14	3,633,765		60.3	30.6	1,676,033	168,375							5,478,173	
Nov.	14	3,518,214		73.0	26.4	1,273,761	29,059							4,621,054	
Dec.	13	3,592,966		67.3	31.9	1,699,805	444,951							5,337,722	
Total		42,264,879		55.4	27.2	20,755,257	13,267,612							76,287,748	
1936															
Jan.	12	3,510,860		61.2	33.5	1,919,669	304,139							5,734,668	
Feb.	12	3,316,229		59.9	34.5	1,906,182	307,310							5,531,721	

Compiled from reports of the Market Administrator.

less the amount specified for the distance of such plant from the City Hall in Kansas City as follows: Not more than forty-five miles, 17 cents per hundredweight, and for each additional ten miles or part thereof, an additional one and one-half cent per hundredweight.

The Class II price proposed for milk delivered to a handler's plant located not more than thirty miles from the City Hall in Kansas City is \$1.70 per hundredweight, and for such milk delivered to such handler's plant located more than thirty miles from the City Hall in Kansas City, the same adjustments are allowed as on Class I milk.

The Class III price for any delivery period, proposed by the proposed marketing agreement and proposed order, is the highest bona fide bid submitted to and subject to the approval of the Secretary by any handler or processor for all Class III milk which may be delivered to him during that delivery period.

D. Price history of the Kansas City, Missouri, market.

1. Farm price of milk sold wholesale.

The average annual farm prices per hundredweight of milk sold wholesale in the States of Kansas and Missouri for the period 1910-1936 are shown in Table 9 and Figure 1. During this period these prices reached a high point of \$3.24 per hundredweight in 1919 in Missouri and \$3.25 per hundredweight in 1919 in Kansas, but declined markedly during the depression of 1921 to \$1.85 and \$1.90 in Missouri and Kansas, respectively. The farm prices for milk sold wholesale in Missouri and Kansas never did recover from the depression period of 1921 and in 1929 were only \$2.17 and \$2.18 in Missouri and Kansas, respectively. With the advent of the depression in 1929 and 1930 these prices fell much farther and reached a low point of \$1.07 in 1932 and 1933 in Missouri and \$1.08 in 1933 in Kansas. Since 1933 these prices have increased somewhat, but even in 1935 the price in Kansas was only \$1.50, and in Missouri, only \$1.52, both prices being much below the average price since 1924.

2. Dealers' buying prices per hundredweight of 3.5 percent raw milk delivered f.o.b. the city.

The prices paid for fluid milk by dealers in the period 1919-1935 are shown in Tables 10 and 11. These prices, up to April 1934, are not comparable to the Class I price, as Class I milk is defined in the proposed marketing agreement and proposed order. Distributors from 1919 to 1931 were not paying producers on a classified price plan, hence these prices are based on estimates made by them as to the amount of fluid milk they thought they would sell during the delivery period.

Table 9. Farm Price of Milk sold wholesale, per hundredweight, in Kansas and Missouri, 1910 - 1936.

Year	Kansas	Missouri
	<u>Dollars</u>	<u>Dollars</u>
1910	1.60	1.65
1911	1.58	1.64
1912	1.61	1.59
1913	1.63	1.70
1914	1.60	1.70
1915	1.56	1.50
1916	1.66	1.61
1917	2.18	2.17
1918	2.84	2.88
1919	3.25	3.24
1920	3.08	3.15
1921	2.16	2.16
1922	1.90	1.85
1923	2.30	2.22
1924	2.09	2.15
1925	2.13	2.20
1926	2.13	2.15
1927	2.20	2.12
1928	2.23	2.15
1929	2.18	2.17
1930	1.90	1.97
1931	1.48	1.58
1932	1.10	1.07
1933	1.08	1.07
1934	1.32	1.42
1935	1.50	1.58
1936		

Compiled from reports of the Bureau of Agricultural Economics,
Division of Crop and Livestock Estimates.

Figure 1: Relation between prices received by farmers for all milk sold wholesale per hundredweight in Missouri and in Kansas, 1910-1935

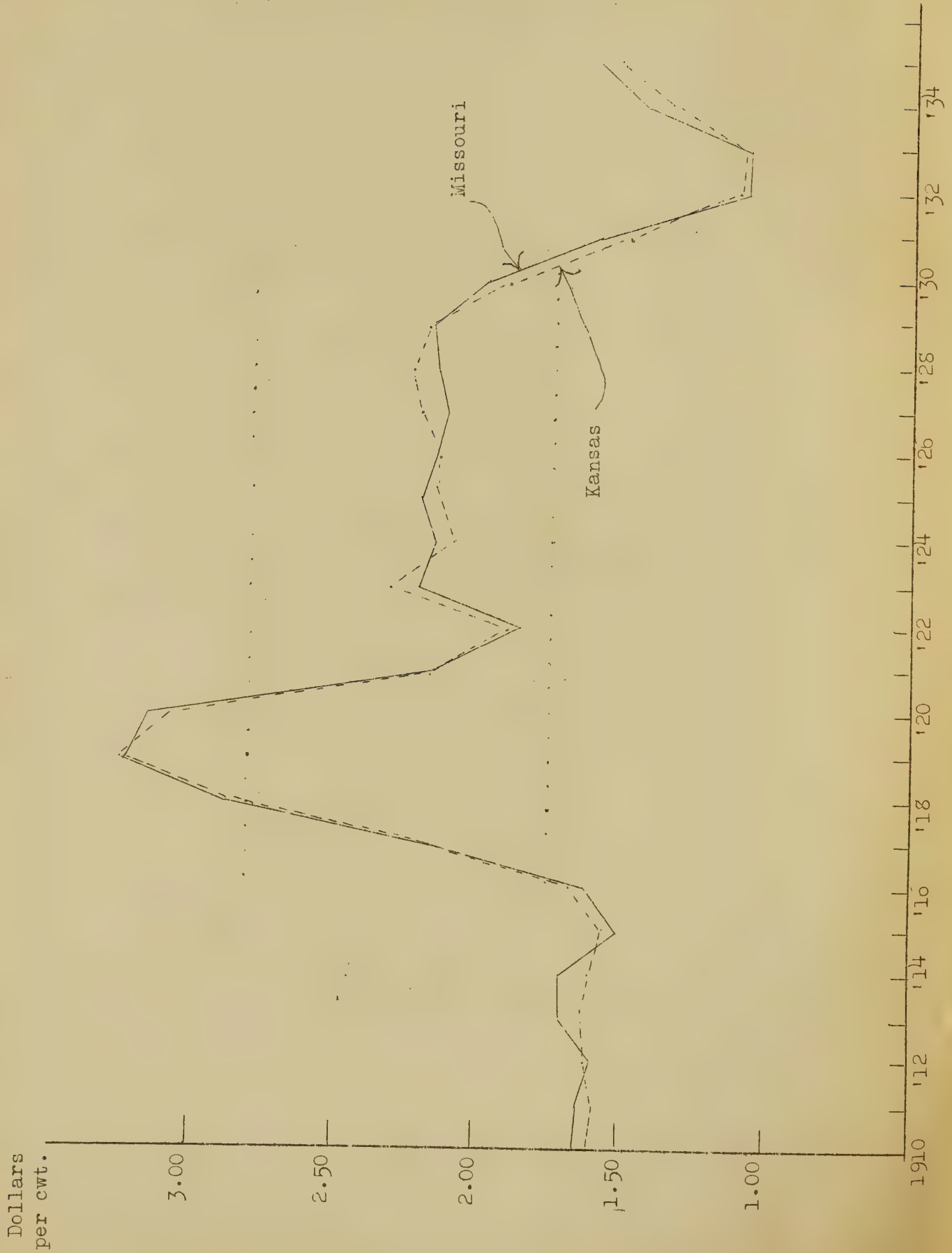


Table 10. KANSAS CITY, MISSOURI: Fluid milk prices, dealers' buying prices per hundredweight of 3.5 percent raw milk delivered f.o.b. city

Compiled from reports of the Bureau of Agricultural Economics, Division of Dairy and Poultry Products

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
1919	3.78	3.87	3.95	3.58	3.03	2.73	3.24	3.60	3.56	3.26	3.75	3.72 1/2	3.51
1920	3.70	3.95	3.74	4.21	3.47	3.41	3.34	3.62	3.68	3.45	2.86	3.36	3.57
1921	2.45-	2.65-	2.65-	3.22*	2.99	2.64	2.52-	2.72-	2.30-	2.12-	2.58-	2.61-	2.83
	3.57	3.10	3.10				3.12	2.78	2.72	2.88	2.98	2.88	
1922	2.31-	2.11-	2.15-	2.15-	2.03-	1.80-	1.75-	2.15	2.15	2.50-	2.62	2.47-	2.33
	2.73	2.73	2.73	2.50	2.15	2.35	2.15			2.62		2.91	
1923	2.77-	2.97	2.97	2.51-	2.40-	2.38	2.38	2.53-	2.73	2.50-	2.73	2.90 1/2	2.65
	2.97		2.85-	2.97	2.73		2.30 1/2	2.59	2.27	2.73	2.50-		
1924	3.08	2.97	2.97	2.02	2.47 1/2	2.27-	2.27	2.27	2.27	2.27	2.50-	2.62	2.56
			2.97			2.38	2.27			2.38			
1925	2.73	2.73	2.73	2.50	2.38	2.27	2.27	2.27	2.27	2.50	2.50-	2.50	2.48
1926	2.73	2.73	2.73	2.73	2.27-	2.15	2.24-	2.35-	2.50	2.50	2.74	2.73	2.53
					2.50		2.27	2.38			2.50		
1927	2.73	2.73	2.73	2.50	2.38	2.15	2.27	2.27	2.27	2.50	2.50	2.73	2.48
								2.33					
1928	2.73	2.61-	2.73	2.38-	2.18-	2.15-	2.15-	2.15	2.15-	2.38-	2.61-	2.61-	2.45
		2.73		2.50	2.27	2.27	2.27		2.27	2.50	2.73	2.73	
1929	2.61-	2.61-	2.65-	2.38-	2.18-	2.15-	2.27	2.18-	2.50	2.38-	2.65-	2.65-	2.49
	2.73	2.73	2.73	2.50	2.50	2.27		2.27		2.50	2.73	2.73	
1930	2.65-	2.65-	2.40-	2.40-	2.20	2.10	2.10	2.30*	2.40	2.50-	2.50-	2.50-	2.41
	2.73	2.73	2.53	2.48						2.53	2.53	2.53	
1931	2.53*	2.50*-	2.50*-	2.50*-	2.26*	2.26*	2.26*	2.16*-	2.26*-	2.31*	2.31*	2.31*	2.36*
		2.53*	2.53*	2.53*				2.31*	2.31*				
1932	2.31*	1.65*	1.65*	1.65*	1.65*	1.65*	1.65*	1.65*	1.65*	1.65*	1.65*	1.65*	1.71*
1933	1.65*	1.65*	1.65*	1.65*	1.65*	1.65*	1.65*	1.65*	1.65*	1.65*	1.65*	1.65*	1.65*
1934	1.65*	1.65*	1.65*	1.75*	1.75*	1.60 1/2	1.75*	2.21*	2.33*	2.33*	2.27*-	2.28*-	1.95*
						1.75*					2.33*	2.33*	
1935	2.28*	2.28*-	2.28*	2.28*	2.28*	2.03*	2.03*	2.03*	2.03*-	2.03*	2.03*	2.03*	2.14*
		2.33*							2.13*				
1936	2.03*	2.03*	2.03*										

*Basic 1/ Interpolated. 2/ Tentative price.

Table 11. Prices paid in Kansas City, Missouri, market for Class I, II, and III 3.8% milk by distributors.

Compiled from reports of the National Cooperative Milk Producers' Federation.

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
1931	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Class I	2.68	2.68	2.68	2.65		2.42	2.42	2.45	2.45	2.44	2.43	2.43	
Class II	2.02	2.02				2.02	2.02	2.06	2.06	2.04		2.04	
Class III	1.45	1/	6/	1/		1.13	1.05	.89-	1.32-				
1932								1.32*	1.60*				
Class I	1.77 ²	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77
Class II	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77		1.77	1.77	
Class III	1.05 ⁸	1.04 ⁸	1.05 ⁸	.93 ⁸	.86 ⁸	.82 ⁸	.87 ⁸	.95 ⁸		.97	.97	1.08	
1933													
Class I	1.77 ²	1.77	1.77	1.77		1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77
Class II	1.77	1.77	1.77	1.77		1.77	1.77	1.77	1.77	1.77	1.77	1.77	1.77
Class III	.93	.88	.88	.96			1.13	1.11	1.11	1.12	1.11	.93	
1934													
Class I			1.87	1.87	1.87	1.87	1.87		1.87 ³	2.24 ⁵	2.16	1.87	
Class II			1.44	1.325	1.39	1.43		1.63	1.55	1.61	1.76	1.79	
Class III				1.154		1.17							
1935													
Class I	2.185	2.40	2.40	2.40	2.40	2.15		2.27	2.15	2.15	2.15	2.15	
Class II	2.07 ³	2.06 ³	2.07	1.96	1.61	1.485			1.65	1.585	1.67	1.895	
Class III	1.43 ²	1.65 ²	1.525	1.445	1.165	1.095			1.245	1.165	1.23	1.395	

1/ Average farm price of Chicago 92-score butter at farm plus average hauling charge of 35¢.
 2/ Country station prices. 3/ License price. 4/ Premium of 37.5 cents per hundredweight is added to the blended price. 5/ Based on February prices. 6/ Price based on net return from butter and cheese.
 7/ Price for 15 day period equal to 3.5 times average price of 92-score Chicago butter, f.o.b. farm.
 8/ 3.5 times 92 Chicago butter at farm, dealer pays transportation and receiving station charge on Class III, and farmer pays them on Class IV.

* August 1-15 ** September 1-15

From 1931 to April 1934 the classified use plan in the market was not so precise as the one prevailing under the Federal license. Such prices probably, especially between 1919 and 1931, include payment for much milk which is now classified as Classes II and III. However, these prices are more comparable to the Class I prices, as now defined, than are the farm prices of milk sold wholesale. This price reached a high point of \$3.57 per hundredweight in 1920 and fell to \$2.30 in 1922. It did not recover materially during the twenties and in 1929 was only \$2.49. It fell again during the depression, reaching a low point of \$1.65 in 1933.

3. Class prices.

a. Class I price.

The price of \$1.65 noted above was in effect at the time of the adoption of the Federal license in April 1934. The minimum Class I price at that time was raised to \$1.75 for milk testing 3.5 percent butterfat, with a \$.04 differential for each point of test above or below 3.5 percent butterfat. This minimum price has remained in effect since that time, although when the butterfat basis for Class I milk was raised to 3.8 percent the Class I price was increased to \$1.87. (See Table 12.)

However, the prices set in the Federal license were minimum prices to be paid producers and in August 1934, after taking cognizance of (1) the increase in production costs as influenced by pasture conditions which were seriously affected by the drought, (2) the increase in costs as affected by the increase in the cost of commercial feed stuffs, (3) the increase in costs as affected by increases in the prices of commodities purchased by farmers as well as in increased labor costs, (4) the less than normal amount of surplus milk in the market, and (5) the danger of a shortage of milk in the future months, handlers and producers agreed upon a premium of \$.46 per hundredweight over the license price to be paid producers for all Class I milk. The premium was increased to \$.58 from August 15 to October 31 and then decreased to \$.53 until May 31, when it was again reduced to \$.28 per hundredweight.

b. Class II price.

The data presented in Tables 11 and 12 with respect to the Class II price show the history of the price since 1931 when milk was first sold in this market on a classified price plan. In the year 1931 the Class II price was, during the first few months, \$.60 below the Class I price but by the end of the year it was only \$.39 below. During the next two years, 1932 and 1933, the same price existed for both Class I and Class II milk.

Table 12. KANSAS CITY, MISSOURI; Class I, Class II, Class III and weighted average price of all milk per hundredweight of 3.8% 1/ milk, f.o.b. Kansas City by delivery periods, April 1, 1934 - November 30, 1935.

Delivery period ending	1934					1935				
	Class I		Class II		Weighted average 2/	Class I		Class II		Weighted average
	License	Pre-mium	License	Pre-mium		License	Pre-mium	License	Pre-mium	
	Dollars		Dollars		Dollars	Dollars		Dollars		Dollars
Jan. 15	1.75					1.87	.53	1.89	1.39	1.83062
Jan. 31	1.75					1.87	.53	2.01	1.48	1.87774
Feb. 15	1.75					1.87	.53	2.12	1.56	1.91624
Feb. 28	1.75					1.87	.53	2.02	1.50	1.88516
Mar. 15	1.75					1.87	.53	1.84	1.36	1.80539
Mar. 31	1.75					1.87	.53	1.83	1.33	1.77055
Apr. 15	1.75		1.2143		1.53582	1.87	.53	2.05	1.51	1.81871
Apr. 30	1.75		1.2444		1.50753	1.87	.53	1.87	1.38	1.70975
May 15	1.75		1.2747		1.51858	1.87	.53	1.64	1.21	1.57094
May 31	1.75		1.25709		1.47952	1.87	.53	1.58	1.17	1.56251
June 15	1.75		1.31		1.50157	1.87	.28	1.50	1.11	1.57258
June 30	1.75		1.31		1.49828	1.87	.26	1.47	1.08	1.54395
July 15	1.75		1.27		1.49986	1.87	.28	1.48	1.09	1.59869
July 31	1.87		1.50		1.63790	1.87	.28	1.50	1.10	1.58619
Aug. 15	1.87	.46	1.61		1.68254	1.87	.28	1.51	1.11	1.60100
Aug. 31	1.87	.58	1.65	.15	1.67391	1.87	.28	1.55	1.14	1.60319
Sept. 15	1.87	.58	1.56	.15	1.68012	1.87	.26	1.59	1.17	1.65097
Sept. 30	1.87	.58	1.55	.15	1.68360	1.87	.23	1.58	1.16	1.72494
Oct. 15	1.87	.58	1.54	.15	1.66003	1.87	.28	1.63	1.20	1.74215
Oct. 31	1.87	.58	1.67	.15	1.69983	1.87	.28	1.71	1.26	1.81729
Nov. 15	1.87	.53	1.75		1.71113	1.87	.28	1.83	1.35	1.85357
Nov. 30	1.87	.53	1.78		1.76516	1.87	.28	1.96	1.44	1.88472
Dec. 15	1.87	.53	1.77		1.80155	1.87	.28	1.98	1.46	1.88218
Dec. 31	1.87	.53	1.82		1.79891	1.87	.28	1.98	1.46	1.84977

Compiled from reports of the Market Administrator.

1/ 3.5% milk, April 1 - July 15, 1934. 2/ Does not include premiums.

These data with respect to the Class II price also disclose that the Class II price, as computed from the formula set up in the license, exceeded the Class I price as established by the license in the first four months of 1935 and again in December of the same year. However, due to the premium paid on Class I milk, the Class I price never did become lower than the Class II price.

There was, between August 15 and October 31, 1934, a premium of \$.15 per hundredweight paid on Class II milk.

The formula established in the Federal license, Number 40, for the computation of the Class II price is as follows: 3.8 times the average price per pound of 92-score butter at wholesale in the Chicago market, as reported by the United States Department of Agriculture for the delivery period during which such milk is purchased, plus 35 percent thereof plus 28 cents. Due to the wide fluctuations in the price of Chicago 92-score butter, the Class II price fluctuated between a low point of \$1.54 in the October 1-15, 1934, period and a high point of \$2.12 during the period February 1-15, 1935.

During the period April 1-July 16, 1934, the price was somewhat lower due to a different formula which was based on Chicago 92-score butter plus 25 percent plus \$.25.

During the period April 1, 1934-December 31, 1935, during which the license has been in effect, the average price for Class II milk has been \$1.67. The premium of \$.15 paid for five delivery periods brought this average to \$1.69. The condenseries near the Kansas City milk shed paid during this period an average price of \$1.17. (See Table 13.) Thus there appears to have been a difference of \$.52 per hundredweight between Class II and condensery prices. The location adjustment allowed handlers for milk produced in the 76-85 mile zone is \$.23. Subtracting the allowance from the difference of \$.52 leaves a premium of \$.29 paid to producers --probably for the extra effort and expense of meeting the Kansas City quality requirements for Class II milk and for their more even production of such milk.

The high quality requirements applicable to milk used to produce sweet cream for consumption, the fact that all such milk is brought to the city as whole milk, and the inability to store such milk for a long time, thus requiring somewhat more even production, necessitate a higher price for such milk than for milk used for manufacturing, both f.o.b. the city and f.o.b. the farm. But the price for such milk cannot be placed too high above the price for Class III milk because the competition in the sale of cream is much more open to price cutting than is the competition in the sale of fluid milk. Roadside-stand distributors of cream immediately outside the marketing area enable customers to

Table 13: Average price paid to producers per hundredweight for 3.5% milk by condenseries adjacent to the Kansas City Area, 1932-1936

Year	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Average
	Dolls.	Dolls.	Dolls.	Dolls.	Dolls.	Dolls.	Dolls.	Dolls.	Dolls.	Dolls.	Dolls.	Dolls.	Dolls.
1932	1.06	.93	.89	.93	.82	.86	.75	.75	.75	.77	.79	.88	.85
1933	.89	.77	.78	.75	.89	.93	1.02	1.05	.97	.98	.96	.89	.91
1934	.88	1.02	1.03	.95	.98	1.06	1.06	1.22	1.04	1.09	1.22	1.23	1.06
1935	1.35	1.52	1.38	1.38	1.10	1.03	1.01	1.04	1.08	1.16	1.34	1.42	1.23
1936	1.44	1.50											
1937													
1938													

Compiled from unpublished records of the Bureau of Agricultural Economics, Division of Dairy and Poultry Products

purchase uninspected cream at low prices. The per unit value of cream is so much higher than the per unit value of milk that it would pay consumers to go outside the marketing area for such cut-price cream when it would not pay them to go after cut-price milk. Furthermore, there is no desire on the part of consumers for uninspected fluid milk.

c. Class III price.

The Class III price for milk in the Kansas City, Missouri, Marketing Area must at all times be in line with the price paid by other processors of milk in and around the supply area. A creamery at Tonganoxie, Kansas, and a cheese factory at Kansas City, Kansas, as well as numerous other creameries and condenseries, have constituted the most important alternative markets for producers of milk in the immediate vicinity of Kansas City, Missouri.

This price since 1931 has been based on the price of 92-score butter in Chicago. The formula for calculating the minimum Class III price under the Federal license is as follows: Multiply by 3.8 the average price per pound of 92-score butter at wholesale in Chicago, as reported by the United States Department of Agriculture for the delivery period during which such milk is purchased, and add \$.20. A premium of \$.05 was paid on Class III milk during the period August 15-October 31, 1934.

The Class III price under the Federal license during the period April 1, 1934 to December 31, 1935, averaged \$1.25. This average price was \$.08 cents higher than the average price paid by the condenseries operating adjacent to this area, and indicates that handlers are willing to pay some premium for such milk even for manufacturing purposes.

4. Class price adjustments.

Country station and transportation adjustments, as well as adjustments for sales outside the marketing area, have been allowed on these class prices. These adjustments are also provided for in the proposed marketing agreement and proposed order and will be discussed along with the proposed prices.

5. Butterfat differential.

The history of the butterfat differential is presented in Table 14. It can be seen in this table that the differential ran as high as \$.10 per 1/10 of a percent per hundredweight in August 1920. However, the premium paid in later years was much lower. It increased from 3.4 cents in 1924 to 4.78 cents in 1930, but since 1932 it has

Table 14: KANSAS CITY, MISSOURI, Fluid Milk Prices. Allowance per 1/10 percent butterfat per hundredweight.

Compiled from reports of the Bureau of Agricultural Economics, Division of Dairy and Poultry Products.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
1919	3-5		Flat		3-5	3-3	8	10	8	8	9		
1920	9	9	9	8	6	8	3-5-7	8.5	5.8				
1921		3-7.5	3	3	Flat	5.5							
1922									3.49				
1923									3.48				
1924	3-5	3-5	3-5	3-5	3-5 1/	3-4	3-4	3-4	3-4	3-5 1/	3-5 1/	3-5 1/	3.40
1925	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3.40
1926	3-4	3-4	3-4	3-3-3.5	3-4-3.5	3-4-3.5	3-4-4.0	3-4-4.0	3-5	3-5	3-5	3-5	3.49
1927	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3.50
1928	3-5	3-5-5.8	3-5	3-5-3.8	3-5-3.8	3-5-3.8	3-5-3.8	5.8	3-5-3.8	3-5-3.8	3-5-3.8	3-5-3.8	3.89
1929	3-5-5.8	3-5-5.8	3-5-5.8	3-5-5.8	3-5-5.8	3-5-5.8	3-5-5.8	3-5-5.8	3-5	3-5-5.8	3-5-5.0	3-5-5.0	4.39
1930	3-5-5.8	3-5-5.0	3-5-5.0	3-5-5.0	5	5	5	5	5	5	5	5	4.78
1931	5	5	5	5	5	5	5	4-5	4-5	4	4	4	4.67
1932	4	4	4	4	4	4	4	4	4	4	4	4	4.0
1933	4	4	4	4	4	4	4	4	4	4	4	4	4.0
1934	4	4	4	4	4	4	4	4	4	4	4	4	4.0
1935	4	4	4	4	4	4	4	4	4	4	4	4	4.0
1936	4	4	4	4	4	4	4	4	4	4	4	4	4.0

1/ Interpolated.

been \$.04. During the period since 1920 the prevailing test of butterfat in milk sold by handlers has tended to increase from approximately 3.7 percent to about 3.9 percent. (See Table 15.)

The butterfat differential, in a market where standardizing is practiced, must be in line with the price for which the handler could buy the additional butterfat he wants. In this market, because of the health regulations, the cheapest a handler can buy butterfat for use in fluid milk is the value of butterfat in Class II milk, which has been approximately \$.04 per hundredweight.

Table 15: KANSAS CITY, MISSOURI, Fluid milk prices, Prevailing butterfat test of milk sold.
Compiled from reports of the Bureau of Agricultural Economics, Division of Dairy and Poultry Products.

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1920													
1921				3.6-4	4	3.6	3.5	3.6-3.8	3.6-3.8	3.8	3.8	3.5-3.8	
1922	3.6-3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.5-3.9	3.7-3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.5-3.8	3.6-3.8	3.8	3.71
1923	3.5	3.5-3.8	3.6-3.8	3.8	3.5	3.6-3.8	3.6-3.8	3.6-3.8	3.5-3.8	3.6-3.8	3.6-3.8	3.8	3.68
1924	3.5-3.8	3.8	3.6-3.8	3.6-3.8	3.75 1/2	3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.6-4	3.72
1925	3.6-3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.8	3.6-3.8	3.6	3.6-3.8	3.6-3.8	3.6-3.8	3.8	3.6-4	3.72
1926	3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.8	3.8	3.6-3.8	3.8	3.73
1927	3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.72
1928	3.6-3.8	3.6-3.8	3.8	3.6-4.2	3.5-4.2	3.5-4.3	3.5-4.3	3.6-3.8	3.6-3.8	3.6-3.8	3.6-3.8	3.6-4.2	3.78
1929	3.6-3.8	3.6-3.8	3.6-4.2	3.6-4.2	3.6-4.2	3.5-3.8	3.6-3.8	3.5-4.2	3.6-3.8	3.6-4.2	3.6-3.8	3.6-3.8	3.78
1930	3.6-4.2	3.6-3.8	3.6-4.2	3.8-4.2	3.6-4.0	3.6-4.4	3.6-3.8	3.6-3.8	3.8	3.5-4.0	3.6-3.8	3.7-4	3.81
1931	3.8	3.7-4.0	3.8	3.7-3.8	3.8-4.0	3.4-4.5	3.7-4.0	3.8-4.0	3.7-4.0	3.8-4.0	3.6-4.0	3.5-4.0	3.85
1932	3.8-4.0	3.8-4.0	3.8-4.0	3.5-4.0	3.8-4.0	3.8-4.0	3.8-4.0	3.8-4.0	3.5-4.0	3.4-4.0	3.5-4.0	3.4-4.0	3.83
1933	3.6-4.0	3.3-4.0	3.3-4.0	3.5-4.0	3.8-4.0	3.8-4.0	3.8-4.0	3.6-4.0	3.8-4.0	3.8-4.0	3.5-4.0	3.8-4.0	3.82
1934	3.6-4.0	3.6-4.0	3.6-4.0	3.8-4.0	3.8-4.0	3.8-4.0	3.8-4.0	3.8	3.8-4.0	3.8-4.0	3.8-4.0	3.6-3.8	3.82
1935	3.8-4.0	3.8-4.0	3.8-4.0	3.8-4.0	3.8-4.0	3.8-4.0	3.8-4.0	3.8	3.8	3.8-4.0	3.8-4.0	3.8-4.0	3.89
1936	3.8	3.8	3.8-4.0										

1/2 Interpolated.

PART VI

Demand Conditions in the Kansas City, Missouri, Marketing Area

A. Business conditions -- purchasing power of consumers.

Employment in manufacturing industries, as indicated by the index of such employment in St. Louis, Missouri in October and November 1935, reached 115.9 and 115.1 percent, respectively, of the employment in November 1931. The conditions in these two months are the best reported since 1931. (See Table 16.)

Payroll totals in manufacturing industries in this section, as indicated by the index number of such payroll totals in St. Louis, Missouri, also reached the highest point since November 1931 in October and November 1935, when they were 12.7 and 12.8 percent, respectively, above the payroll total of November 1931. (See Table 17.)

The index of the cost of goods purchased by wage earners and low-salaried workers has increased somewhat since 1932 to offset, to a small extent, the increase in employment. However, the worker in this area is in a much better condition now than he has been for the last five years. (See Table 18.)

The number of families and individuals on relief funds in Kansas City, Missouri, is shown in Table 19. It can be seen that during 1935 there has been a sharp reduction in the number of families and individuals on direct relief. In January 1935 over 13,000 families were receiving relief, while in December 1935 only a little over 9,000 were receiving direct relief. Many of these families have found employment with the Works Progress Administration.

As indicated by the Monthly Review of Agricultural, Industrial, Trade, and Financial Conditions, published by the Federal Reserve Bank of Kansas City, general conditions in the Tenth Federal Reserve District showed some improvement in the year 1935 as compared with the year 1934.

Retail sales during 1935 were the highest since 1931 and in December 1935 were 3.3 percent higher than in December 1934.

Wholesale sales were larger than in 1934 and in December 1935 were 7.8 percent larger than in December 1934.

Table 16. ST. LOUIS, MISSOURI: Index Numbers of Employment in Manufacturing Industries by months, November, 1931 - 1936.

(November, 1931 = 100)

Compiled from reports of the United States Department of Labor, Bureau of Labor Statistics.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Av.
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1931	102.1	102.5	102.0	99.9	97.0	94.0	92.9	92.3	93.6	95.2	100	103.5	-
1932	97.2	97.1	95.5	96.8	96.8	100.7	104.4	108.5	109.0	109.0	93.8	98.6	97.0
1933	102.8	109.6	112.7	116.2	114.8	115.1	113.1	112.4	113.1	110.4	104.8	106.2	102.2
1934	108.4	111.5	113.9	115.5	112.5	112.2	111.7	112.8	114.0	115.9	110.4	111.6	111.9
1935											115.1	118.3	113.5
1936													

April 10, 1936.

TABLE 18. KANSAS CITY, MISSOURI:

Index of cost of goods purchased by wage earners
and low-salaried workers.

Compiled from reports of the U. S. Department of Labor, Bureau of Labor Statistics.

December 1917 = 100

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1917												100.0	
1918												119.1	
1919						119.8						137.8	
1920						153.9						140.2	
1921					129.2				126.5			124.6	
1922			118.1			118.0			116.7			117.7	
1923			117.9			117.5			118.5			118.8	
1924			117.6			116.2			115.9			116.8	
1925						118.6						120.4	
1926						119.6						117.3	
1927						117.3						113.2	
1928						113.3						112.7	
1929						112.5						113.7	
1930						112.0						109.1	
1931						104.7						100.3	
1932						93.1						90.6	
1933						88.9						90.3	
1934						91.7					93.3		
1935			94.7				93.6			94.0			
1936													

Table 19.

Families and Individuals receiving Relief Funds in Kansas City,
Missouri, September 1, 1934 to December 31, 1935.

	Direct Relief			W.P.A. Relief	
	Families receiving relief	Number of individuals in families on relief	Single persons receiving relief	Total cases reported	Total individuals on relief
1934					
September	10,362		3,264	13,626	40,999
October	10,657		3,465	14,122	42,274
November	11,544		3,855	15,399	45,894
December	12,582		4,413	16,995	50,234
1935					
January	13,319		4,857	18,176	53,361
February	13,297		5,158	18,455	53,583
March	13,045		5,277	18,322	52,718
April	12,656		5,467	18,132	51,209
May	12,326		5,472	17,798	50,122
June	11,899		5,358	17,257	48,029
July	11,784	42,212	4,486	-	46,698
August	11,645	41,178	4,573	-	45,751
September	10,507	37,385	4,569	-	41,954
October	11,017	39,585	4,644	-	44,229
November	10,541	37,359	4,781	-	42,140
December	9,057	31,202	6,681	-	37,883
					688
					40,348
					44,588

Compiled from reports of the Market Administrator of the Kansas City Marketing Area.

The value of total building contracts awarded was, in 1935, considerably above (27.1 percent) the value of contracts awarded in 1934. The value of residential building contracts awarded during 1935 was 83.5 percent larger than in 1934.

Much of the area around Kansas City, Missouri, is agricultural and so the income of the marketing area is closely related to the income of the rural community surrounding it. The farmers' condition in the area was considerably better during 1935 even though the prices were somewhat lower than those received for the short crops of 1934. Increased production more than offset the lower prices. The December 1 farm value of crops produced in the area was nearly 30 percent more than the value of crops on December 1, 1934. The total farm value of 64 principal crops in Missouri in 1935 was over \$24,000,000 greater than in 1934, and in Kansas, over \$7,500,000.

Thus, it appears that the demand for milk should, with a continuance of better times, be considerably strengthened.

B. The sales of fluid milk and cream.

It is very difficult to secure a complete quantitative picture of the sales of Class I and Class II milk in the Kansas City market. The number of producer-handlers reporting to the administrator has shown a definite downward trend which trend is reflected in the falling off of reported Class I sales. There was also a sharp drop in Class I sales from February 1934 to April 1934 due to the fact that handlers were not supplying so much milk for relief.

The best picture of the trend of sales can probably be gotten from the reported Class I milk of pasteurizing handlers handling milk in Kansas City, Missouri, and who reported each period under the license. (See Table 20.) In November and December 1935 the total Class I milk of 16 handlers amounted to 7,096,577 pounds and in the same months of 1934 to only 7,007,673 pounds. It must be noted also that, as the Federal license continues in effect, handlers are inclined more and more to keep such records that more clearly reflect their actual Class I milk and many sales reported by these handlers as Class I in 1934 were actually Class II milk and so reported in 1935.

During 1935 the average daily Class I sales of handlers did not change more than would normally be expected despite the change in price. For example, the daily average Class I sales in May amounted to 109,810 pounds and in June, when the premium paid on Class I milk fell from \$.53 to \$.28 and the retail price fell from \$.12 per quart to \$.11 per quart, the daily Class I sales were only 109,929 pounds.

Table 20. KANSAS CITY, MISSOURI: Class I milk reported by 16 distributors, daily average sales, and index numbers of seasonal variation (April 1934-March 1935 = 100) in Class I milk, by months, April 1934-February 1936.

Year and month	Total Class I milk	Daily Class I milk	Index of seasonal variation
	Pounds	Pounds	Percent
<u>1934</u>			
April	4,114,871	137,162	111.5
May	4,388,083	141,551	115.0
June	4,075,186	135,840	110.4
July	3,865,301	124,687	101.3
August	3,636,829	117,317	95.3
September	3,511,380	117,046	95.1
October	3,734,315	120,462	97.9
November	3,462,696	115,423	93.8
December	3,544,977	114,354	92.9
Total - 9 months	34,333,638	124,850	101.5
<u>1935</u>			
January	3,647,589	117,664	95.6
February	3,311,533	118,269	96.1
March	3,623,807	116,897	95.0
April	3,396,264	113,209	92.0
May	3,404,117	109,810	89.2
June	3,297,868	109,929	89.3
July	3,470,938	111,966	91.0
August	3,522,469	113,628	92.3
September	3,494,304	116,477	94.7
October	3,633,765	117,218	95.3
November	3,518,153	117,272	95.3
December	3,578,424	115,433	93.8
Total - 1935	41,899,231	114,792	93.3
<u>1936</u>			
January	3,497,002	112,807	91.7
February	3,296,535	113,674	92.4

Compiled from reports of the Market Administrator.

Thus it appears that the demand for Class I milk is quite inelastic in this market and that only a sharp fall in price would tend to increase the consumption of fluid milk.

The fluid milk sales in Kansas City, Missouri, did not vary to any great extent seasonally in 1935, ranging for these same sixteen handlers from 118,269 pounds daily in February to 109,929 pounds daily in June. But, as will be shown later, the seasonal variation in the production of milk in the area is much more marked than this seasonal variation in sales. This being the case, the analysis set forth in the paper written by Gaumnitz and Reed referred to above and attached as Appendix A is of special significance in explaining the price structure for milk in a market such as Kansas City, Missouri, and pointing out the economic justification for the price structure as provided in the proposed marketing agreement and proposed order for the Kansas City, Missouri, Marketing Area.

C. Sanitation requirements.

The Kansas City, Missouri, health authorities have established very high quality standards for milk which is sold for fluid milk, cream, buttermilk, and cottage cheese in that city. The sanitation requirements for such milk are contained in the Health Regulation Ordinance 41,500 passed in 1921. Four grades of milk are established in the regulation.

1. Grade A raw milk must have a bacteria count of less than 30,000 per centimeter at the time of its delivery to consumers. The animals producing such milk must be tested semi-annually and must be physically examined once a month.

2. Grade A pasteurized milk must not have more than 100,000 bacteria per centimeter when delivered to pasteurizing stations in the country, 200,000 when delivered to pasteurizing stations in the city, and 30,000 when delivered to consumers. The animals producing such milk must be tested annually for TB and must have a physical examination semi-annually.

3. Grade B pasteurized milk must not have more than 300,000 bacteria per centimeter when delivered to a pasteurizing station in the country; 1,000,000 when delivered to a pasteurizing and bottling station in the city; and 50,000 when delivered to consumers. The animals must be tested annually for TB with a physical examination every year.

4. Grade C milk can be pasteurized for use in manufacturing and cooking only. The bacteria count must not exceed 1,000,000 per centimeter when delivered to the pasteurizing station and not more than

50,000 when delivered to consumers. It can be delivered to consumers in cans only. The animals must be tested annually for TB and physically examined yearly. Strict requirements are set forth as to the establishment and cleanliness of stables, utensils, milk houses, methods of milking and cooling, water supply, and employees.

All milk used for buttermilk must be of such quality that, when fresh, it could be sold as Grade A Pasteurized or Grade B Pasteurized.

Cottage cheese must be made from those grades of milk provided for in the ordinance.

No grade of milk can be received and bottled at a plant where another grade of milk, skimmed milk, or cream is powdered, bottled, canned, or placed in other fluid containers.

During certain seasons of the year milk must be delivered to the city twice daily.

Besides these city regulations there is maintained by the Consumers' League, a group of public-spirited citizens, what is known as the White List. The list consists of the names of producers who are subject to a much more rigid inspection as to premises and health of attendants and whose milk is obtained from cows tested for Bang's disease and has a much lower bacteria count than that required under the city regulations.

The largest number of producers on the White List are found to be producer-handlers. There are 75 of such producers on the White List. All the producers of three plants are on the White List. At one of these plants the handler pays a premium to producers on the White List but the other two do not.

This Consumers' League is an indication of the desire that the consumers in the marketing area have for good quality milk for which they are willing to pay a premium. The requirements that have been set forth in the health ordinance all represent expense to producers, and, if they are to continue to live up to the high standard set for them, they must receive adequate compensation.

D. Alternative outlets for dairy products produced in the Kansas City, Missouri, supply area.

Figure 2 shows the locations of creameries, cheese factories, and condenseries in the area, or adjacent to the area, supplying milk to the Kansas City Marketing Area.

In Table 21 is presented the amount of butter and cheese, expressed as milk equivalent, manufactured in the supply area from 1929 to 1934. These data indicate that there is a strong alternative market in manufactured products outlets for the milk in this area in which milk is produced for the marketing area.

Ice cream companies, cheese factories, and creameries in and near the marketing area have been the most important alternative outlets for milk in and near Kansas City, Missouri.

More important than any of these markets, however, is the milk drawn in for distribution in the Kansas City, Kansas, market. According to April 1934 reports this amounted to about one-fifth as much wholesale milk as was needed in Kansas City, Missouri. The Topeka and Leavenworth markets also adjoin the supply area and present at all times a potential market for milk, if prices prevailing in the Kansas City, Missouri, market are not adequate.

Table 21. Butter and cheese expressed as milk equivalent manufactured in counties located in the supply area of the Kansas City, Missouri, milk market, 1929-1934.

County	1929	1930	1931	1932	1933	1934
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
Kansas						
Miami	5,575,501	6,865,565	9,168,878	10,096,699	11,320,873	11,248,569
Wyandotte	55,246,901	24,667,390	20,852,591	35,947,798	21,566,347	29,355,531
Johnson	14,911,419	11,839,735	12,350,357	14,821,203	16,656,855	17,044,546
Jefferson	1,591,905	1,675,584	1,606,456	4,723,494	5,344,837	5,428,357
Leavenworth	2,831,729	3,506,981	5,902,855	5,126,667	8,278,720	11,434,282
Douglas	5,001,577	6,736,170	4,510,740	8,889,918	8,683,065	4,945,442
Total	85,159,030	55,291,425	54,391,877	79,605,779	71,850,697	79,506,727

Compiled from the annual reports of the State Board of Agriculture of Kansas.

PART VII

The Supply Conditions in the Area Supplying Milk to the Kansas City, Missouri Marketing Area.

A. Location and boundaries of the Kansas City, Missouri, milk supply area.

1. Counties in which Kansas City milk supply originates.

The milk which enters the Kansas City market comes from the two States of Kansas and Missouri. Producers who supply milk to this market are located in the following counties: Jefferson, Leavenworth, Wyandotte, Douglas, Johnson, and Miami in Kansas; Clay, Ray, Jackson, Lafayette, Cass, Johnson, Bates, and Platte in Missouri. (See Figure 2.)

2. The total area and location of producers in the Kansas City milk shed.

The size of the region from which the Kansas City milk supply is drawn is indicated by the fact that producers at Butler, 67 miles south, and at Lawrence, 35 miles west, truck milk to the market. However, within a radius of ten miles of the corporate limits of Kansas City, 90 percent of the producer-handlers (who supply about 50 percent of the milk on the market) are located, and about 10 percent of the bulk milk producers, i.e., producers selling milk in bulk to handlers. A high proportion of the producer-handlers operate a very specialized type of dairy enterprise, buying a considerable proportion of their feed and keeping their production balanced by various means.

The producers who sell bulk milk, however, depend very largely on their own farm operations for their feed supply and milk stock, and operate on a much smaller scale ordinarily.

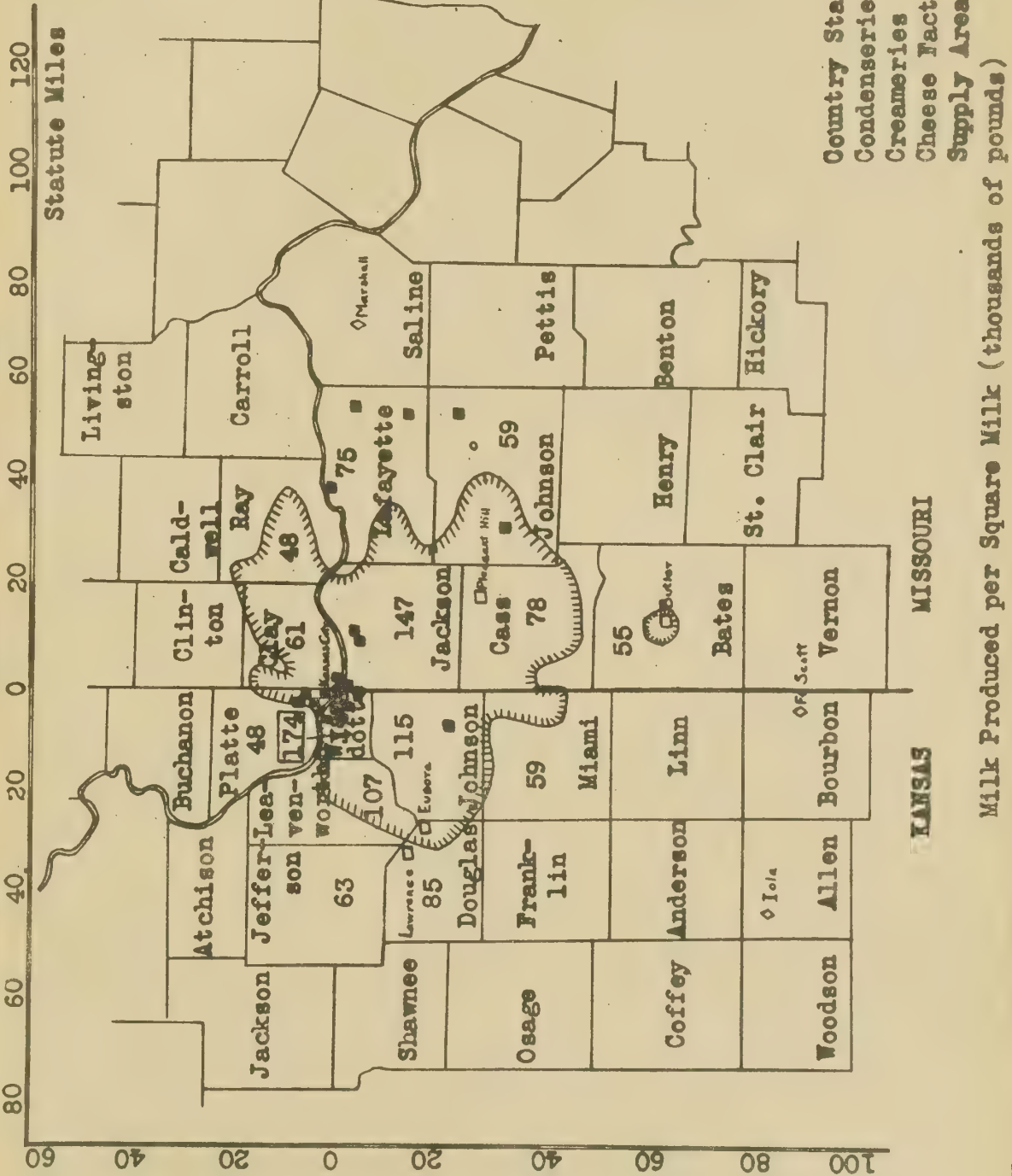
3. Competing markets for milk produced in the area.

The counties in which milk is produced for sale in the marketing area and the locations of the country stations, creameries, cheese factories, and condenseries in the area are shown in Figure 2.

All milk purchased by the handlers operating in the marketing area is shipped by truck to the city as fluid milk. The competition of the numerous creameries, cheese factories, and condenseries in the area represents alternative markets for the milk of the producers, and the prices paid by them determine to a large extent the market to which the producer will send his product.

Figure 2

KANSAS CITY SUPPLY AREA



The Kansas City, Missouri, Marketing Area is located in a section where there is a large milk supply. There is at all times a large potential supply of milk and cream surrounding the area which now supplies the milk for the marketing area. This source of supply is held out of the market by many factors. Three of these are (1) the health requirements, (2) higher costs for the production of market milk in reasonably uniform seasonal amounts, and (3) transportation costs. If, on the one hand, price differentials in favor of fluid milk for consumption either as milk or as sweet cream get wider than these additional difficulties in production and delivery justify, then farmers who ordinarily produce butterfat are disposed to compete for a place in the market. If, on the other hand, the price differential is unfavorable to the whole milk producer, an opposite movement which increases creamery and cheese factory volume takes place.

This competition with huge supplies of lower value dairy products close at hand is a very important element in the picture which must be carefully considered in establishing a classification and price structure for the Kansas City, Missouri, Marketing Area.

B. Type of farming in the area.

Table 22 shows the four type-of-farming areas which are found in the production area, and gives an indication of the importance of specialized dairy farms among the total of all farms. In type area 198 the Kansas City-St. Joseph-Livestock-dairy-cash grain-potatoes, tobacco-fruit and truck area, which contains over one-half of the total supply area and includes that portion of the area which lies closest to the city, some 11 percent of the farms are of dairy type with over 40 percent of their income from that source. The other three areas making up the rest of the total supply area are 197A on the north and northwest, 231A on the northeast, and 232A on the south, and are considerably less intensive dairy areas with only 2 or 3 percent of their farms with over 40 percent of their income from dairying. These surrounding type areas are of corn belt or general livestock type of farming with over 50 percent of their income from meat animals. 197A is a typical corn belt area while the other two areas, 231A and 232A, are of general livestock or animal specialty types.

1. Use of land.

The census of agriculture for 1930 shows that except for city areas over 90 percent of the land in the region surrounding the Kansas City market is in farms. Of the area in farms close to the market, pasture makes up 36 percent, corn acreage is 24 percent, small grain about 12 percent, hay about 10 percent, and cash crops 4 percent. (See Table 23.)

Table 22. Types of farming areas in Kansas City Area with their description and percent of income from dairying.

Type area number	Description of farm	Percent of income from dairy
197 A	N. E. Kansas - Nebraska - Missouri - Livestock, general, cash-grain.	8
198	Kansas City - St. Joseph - Livestock, dairy, cash-grain, potatoes, tobacco, fruit, truck.	20
231 A	Northern Missouri - Iowa - Livestock, general farming	9
232 A	West Central Missouri - Kansas - Livestock, general farming, some cash-grain.	9

Compiled from 1930 Census of Agriculture; "Types of Farming in the United States" -- Table 5.

Table 23. Use of land in selected areas adjacent to and including the Kansas City Milk Supply Area, 1929 and 1934.

State and county	Percent of land in farms in specified crops									
	Percent land in farms is of total land		All pasture		All crops		Corn		Threshed oats	
	1929	1934	1929	1934	1929	1934	1929	1934	1929	1934 ^{1/}
Kansas										
Douglas	91.8	94.9	40.6	39.9	51.1	53.8	20.9	17.6	3.2	4.5
Jefferson	96.0	97.2	34.6	37.8	58.3	54.5	26.2	20.1	4.6	2.9
Johnson	87.2	88.2	39.3	36.5	56.3	57.2	22.1	15.2	4.3	8.2
Leavenworth	92.8	95.5	36.8	41.2	57.1	52.6	19.3	16.9	3.6	3.2
Miami	91.8	92.1	39.9	41.4	51.6	51.6	20.9	20.3	1.7	7.1
Wyandotte	72.1	66.0	36.6	36.6	52.9	54.8	14.2	12.7	1.3	1.3
The State	89.8	91.7	39.8	37.4	56.5	58.1	14.1	6.3	2.2	2.2
Missouri										
Bates	91.0	92.1	36.2	40.4	57.9	53.6	23.9	20.9	4.6	5.0
Cass	90.2	91.4	40.0	41.7	54.5	53.7	20.9	21.6	2.3	5.6
Clay	84.3	81.3	48.6	54.3	45.5	40.0	22.5	17.1	2.2	2.2
Jackson	75.5	76.4	45.5	46.3	48.0	47.9	20.3	16.3	1.8	2.4
Johnson	91.5	91.9	43.7	45.7	50.0	48.6	19.8	16.5	2.8	4.7
Lafayette	95.4	95.7	31.0	33.6	62.3	60.2	23.2	18.1	3.6	4.4
Platte	87.4	84.2	34.5	36.3	60.9	57.2	18.7	15.6	4.3	4.7
Ray	89.7	94.1	39.0	44.1	55.9	49.6	24.5	19.2	3.3	2.9
The State	76.7	79.7	42.4	47.2	46.4	41.7	16.5	13.8	3.0	1.7

Compiled from United States Census of Agriculture, 1930, Volume II, Part I, Tables I and IV and United States Census of Agriculture 1935.

^{1/} Includes hay and sorghums.

2. Size of farm.

Farms close to the Kansas City supply area are relatively smaller than is usual in corn belt areas. In Wyandotte County, Kansas, and in Jackson County, Missouri, which represent conditions close to the city, the average size of farm is only 44 acres and 84 acres, respectively. Dairy type farms in these two counties contain 107 and 108 acres. Bates County, which is more typical of the farming of bulk milk producers, has farms of 150 acres and dairy type farms of 160 acres. Douglas County, representative of conditions in Kansas where production of bulk milk is carried on with two country stations within its borders, has farms of 149 acres and dairy type farms of 139 acres. (See Table 24.)

C. Character of the dairy herds.

Table 24 shows that the average size of milk cow herds on farms reporting milk cows in the supply area was, in 1929, between 4 and 5. This, however, does not reflect the true size of herds on those farms which lie close to the market and which supply it with market milk, although it does represent more closely the size of herds on farms of bulk milk producers.

For example, in Jackson County, Missouri, which is close to the market, the average number of milk cows per farm reporting milk cows was 6.3. 17.6 percent of the farms of the county are of dairy type, and on these dairy type farms the average number of milk cows per herd is 15.8. This difference is even more noticable in Wyandotte County, Kansas. But in Bates County, Missouri, a bulk milk area, the average number of milk cows per farm reporting milk cows was 4.5. In this county only 3.2 percent of the farms are of dairy type and most of the farms from which bulk milk is delivered obtain less than 40 percent of their income from dairying. Even these dairy type farms, however, have herds of only 11.9 milk cows.

The relation of the dairy enterprise on these farms to the beef enterprise is indicated in the last three columns in Table 24. In Wyandotte County, Kansas, the percent milk cows are of all cattle is so high (59.3 percent) as to make it nearly impossible to maintain milk cow numbers even if all heifer calves born in the county were raised for milk cows. This, of course, is not done so that undoubtedly many producers in this county must buy all or a large share of their cows. In Jackson County, Missouri, a similar although less pronounced situation of this type exists. In Douglas County, Kansas, however, only 33.9 percent of all cattle are milk cows, and in Bates County, Missouri, only 30.2 percent of all cattle are milk cows:

Table 24: Type and size of farm, size of herd and type of cattle enterprise in selected areas which include the Kansas City milk supply area

County and State	Percent of farms of dairy type		Size of dairy type farms		No. of milk cows per farm reporting Milk cows		Percent milk cows are of all cattle		Percent milk cows of dual purpose and beef breeding are of all cows on all farms, on dairy type farms	
	Percent	of	Size of farm	Acres	Number	per farm	Percent	are of all cattle	Percent	Percent
Kansas										
Miami Co.	3.4		155	125	4.7		9.5	31.5	28.4	9.9
Wyandotte Co.	10.4		44	107	4.8		17.2	59.3	2.8	3.2
Johnson Co.	10.6		114	138	5.8		18.2	36.8	10.9	5.0
Jefferson Co.	6.9		154	154	5.0		9.7	28.2	24.1	14.4
Leavenworth Co.	15.8		131	143	6.1		12.9	42.5	8.9	3.6
Douglas Co.	10.9		149	139	5.9		12.1	33.9	18.5	4.3
The State	4.0		283	149	5.1		11.1	22.5	36.6	16.7
Missouri										
Platte Co.	1.8		129	114	3.2		12.1	29.3	17.7	9.0
Clay Co.	4.5		116	122	3.7		16.4	19.6	17.0	.3
Ray Co.	3.1		120	113	3.3		9.1	30.7	20.0	1.5
Lafayette Co.	2.0		125	87	4.5		10.4	31.9	21.9	3.8
Johnson Co.	4.8		146	132	4.6		10.6	28.1	22.3	3.6
Jackson Co.	17.6		84	108	6.3		15.8	41.6	5.8	2.9
Cass Co.	10.7		138	128	5.3		11.3	32.0	17.4	2.9
Bates Co.	3.2		150	160	4.5		11.9	30.2	24.8	3.7
The State	5.6		132	129	4.1		9.9	32.4	22.4	4.6

Compiled from the United States Census of Agriculture for 1930. (Vol. II, Part 1 and Vol. III, Part 1)

Again it is enlightening to note the difference in the type of milk cows used on farms close to the market and on those farther away. The last two columns in Table 24 show that while Wyandotte County, Kansas, had practically no milk cows of dual purpose or beef breeding even on the general run of farms reporting milk cows in 1929, Bates County, Missouri, reported 24.8 percent of the cows milked as of beef or dual purpose breeding on the average farm reporting cows milked.

Table 25 shows that milk production per cow varies widely among the counties around Kansas City and that those counties which are close to the market have the highest production per cow while those outlying counties from which milk is delivered chiefly to bulk stations have very low production per cow. Wyandotte County, for example, produced 3,049 pounds of milk per cow in 1929 while Bates County produced only 3,553 pounds per cow.

Summarizing the most significant of the county figures on the milk produced per herd daily, it is of interest that Wyandotte County, Kansas, produced 80 pounds per average herd and 316 pounds per herd on dairy type farms; Jackson County, Missouri, produced 90 pounds daily per average herd and 272 pounds per herd on dairy type farms; while Bates County, Missouri, which had only 3.2 percent of its herds on dairy type farms produced only 43 pounds daily per average herd and 166 pounds daily per herd on dairy type farms.

Figure 2 shows the net effect of all these conditions on the density of milk production per square mile by counties in the Kansas City supply area.

D. Production and disposition of milk.

1. Production.

In Wyandotte County, Kansas, 174,000 pounds of milk were produced per square mile. In Jackson County, Missouri, 147,000 pounds of milk were produced per square mile, but in Douglas County, Kansas, 84,000 pounds and in Bates County, Missouri, only 54,000 pounds were produced per square mile.

Column 1 in Table 25 shows that the total milk produced in the counties from which the Kansas City supply originates was, in 1929, approximately 600 million pounds.

The area within the milk shed contains producers of diverse types, with a wide variety of natural resources, types of farming, feed supplies, amounts of feed purchased, and type of cattle. This gives some

Table 25. - Total production, production per square mile, per cow and daily per herd, and expenditure for feed per farm in selected counties in Kansas and Missouri.

State and county	Total milk produced Pounds	Milk produced per square mile Pounds	Milk production per cow		Milk produced daily per herd		Annual expenditure for feed per farm	
			All farms Pounds	Dairy type farm Pounds	All farms Pounds	Dairy type farm Pounds	All farms Dollars	Dairy type farm Dollars
Kansas								
Miami	35,400,077	58,804.1	3,676.4	5,673.8	47.1	147.2	275	417
Wyandotte	24,953,476	174,499.8	6,049.7	6,734.7	80.2	316.6	368	143
Johnson	55,765,238	114,743.3	5,157.7	6,904.6	81.4	344.3	597	1,866
Jefferson	34,434,004	63,414.4	3,721.4	4,710.5	50.6	124.7	426	265
Leavenworth	47,144,899	107,147.5	4,483.6	5,663.1	75.3	200.3	345	493
Douglas	39,824,648	84,914.0	4,073.3	5,102.5	65.8	169.2	312	443
The State	2,805,258,269	34,305.0	3,875.4	5,306.3	53.8	161.3	339	516
Missouri								
Platte	19,829,373	47,781.6	4,056.7	6,085.1	35.7	201.6	471	777
Clay	24,331,275	60,525.6	4,308.7	6,384.2	43.7	286.4	1,521	1,508
Ray	26,914,371	47,636.1	3,492.2	5,445.5	31.5	136.0	395	371
Lafayette	46,142,259	75,395.8	3,833.7	5,741.5	47.1	162.9	370	653
Johnson	49,390,316	59,434.8	3,537.0	4,811.8	44.8	139.2	368	465
Jackson	89,547,310	146,799.7	5,227.5	6,300.2	90.3	272.3	644	1,448
Cass	56,505,010	78,370.3	3,913.2	4,746.0	56.4	146.3	474	372
Bates	47,554,956	54,660.9	3,553.7	5,114.7	43.4	166.1	349	543
The State	3,174,552,710	46,190.8	5,012.5	4,947.0	43.7	134.8	282	421

Compiled from Fifteenth census of the United States, United States Department of Commerce, Bureau of the Census, Volumes II and III.

farmers great competitive advantages and gives others disadvantages in the production of market milk. This situation explains the fact that so many butterfat producers, as well as many farmers who do not dairy on a commercial scale at all, are, even close to the market, mixed in among the whole milk producers. The production of fluid milk requires, as previously indicated, the incurring of certain costs for meeting health ordinances, for transportation, and for uniformity of supply, which many producers, though close to the market, have found it unprofitable to incur. A wider spread between butterfat and fluid milk prices would bring producers into the milk shed from farther out and would overcome the inertia of some of these close-in butterfat producers, turning them to market milk production.

2. Deliveries per day per dairy.

Table 26 shows the deliveries of milk per day per dairy to the Kansas City market. It is clear from these figures that there has been no appreciable expansion of the output per dairy since April 1934.

3. Disposition of the farmers' output.

Of the 25 million pounds of milk produced in Wyandotte County, Kansas, over 18 million pounds, or 72.9 percent, is sold as whole milk,^{7/} of which all but 2 million pounds is produced on farms with over 40 percent of their income from dairy products. (See Tables 27 and 28.) This is the extreme of dependence on whole milk market outlets. Jackson County, Missouri, shows a very similar disposition of its output although farmers there are slightly less dependent on such outlets.

Douglas County, Kansas, however, sells about 19 million pounds, or 35.8 percent, of its output as whole milk, while Bates County, Missouri, sells only 12.4 percent of its production as whole milk.

It is very significant that in no case is less than half of the milk produced on dairy type farms sold as whole milk, and in the case of several counties this percentage sold as whole milk rises to 80 or 90 percent on dairy type farms.

For the area as a whole the census of 1930 reports about 230 million pounds sold as whole milk, or 38 percent of the total production of the area.

^{7/} Whole milk, as reported in the census, includes all milk sold from the farm as milk. This includes sales to such outlets as whole milk creameries, cheese factories, condenseries, fluid milk markets, and ice cream factories.

Table 26. Average deliveries of milk per day, per dairy in the Kansas City, Missouri Area, April 1934 - January 1936.

Month	Deliveries per day, per dairy		
	1934	1935	1936
	<u>Pounds</u>	<u>Pounds</u>	<u>Pounds</u>
January	--	137.6	142.6
February	--	140.1	147.2
March	--	155.6	
April	187.0	182.0	
May	202.7	197.7	
June	191.5	171.9	
July	173.7	165.4	
August	159.9	174.7	
September	151.5	163.7	
October	162.9	141.4	
November	159.6	128.5	
December	135.0	133.4	
Average	--	157.7	

Compiled from reports of the Market Administrator.

Table 27.- Disposition of milk produced on farms in selected areas in the Kansas City Marketing Area, 1930.

State and county	Total milk produced			Whole milk sold			Farm butter	
	All farms		Dairy farms	All farms		Dairy farms	Sold from all farms	Milk equivalent Pounds
	Pounds	Pounds		Pounds	Pounds		Pounds	
Kansas								
Miami	35,400,077	4,136,187		3,304,146	2,037,650		14,654	304,352
Wyandotte	24,953,476	18,028,782		18,202,554	16,782,685		34,505	716,642
Johnson	55,765,238	31,540,362		31,929,039	27,905,710		40,140	833,677
Jefferson	34,434,004	6,825,510		12,236,880	4,862,861		12,416	257,871
Leavenworth	47,144,899	23,173,551		34,111,522	20,906,609		38,380	797,123
Douglas	39,824,648	12,414,298		14,271,820	9,658,221		24,528	509,428
The State	2,805,258,269	390,401,541		453,763,632	254,628,981		2,235,922	46,438,380
Missouri								
Platte	19,829,373	2,354,938		3,050,764	1,701,252		36,069	679,439
Clay	24,331,275	8,886,827		9,364,574	7,548,805		50,205	945,722
Ray	26,914,371	4,220,235		3,334,409	2,535,461		46,149	869,318
Lafayette	46,142,259	3,508,035		2,862,725	1,990,410		48,856	920,311
Johnson	49,390,316	8,131,954		6,573,969	4,491,419		13,740	258,823
Jackson	89,547,810	61,118,299		63,040,270	54,094,413		85,930	1,618,681
Cass	56,505,010	17,199,604		18,885,316	12,564,015		30,001	565,135
Bates	47,554,956	6,608,223		5,904,683	3,719,225		21,379	402,721
The State	3,174,552,710	702,914,507		576,246,062	377,847,605		3,492,304	65,785,261

(Continued)

Table 27(Continued).-- Disposition of milk produced on farms in selected areas in the Kansas City Marketing Area, 1930.

State and county	Cream sold		Cream sold as butterfat		Milk used on all farms	
	From all farms	Milk equivalent Pounds	Butterfat Pounds	Milk equivalent Pounds	Butterfat Pounds	Milk equivalent Pounds
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
Kansas						
Miami	7,619	48,221	813,462	20,593,975	61,447	1,555,620
Wyandotte	37,733	238,816	36,470	923,291	7,414	187,696
Johnson	304,685	1,928,386	451,112	11,420,557	37,228	942,481
Jefferson	39,060	247,215	512,761	12,981,291	49,095	1,242,911
Leavenworth	17,153	108,563	207,672	5,257,519	42,863	1,085,139
Douglas	76,348	483,215	602,764	15,259,848	66,894	1,693,519
The State	5,423,897	34,328,462	57,133,252	1,446,411,443	3,383,161	85,649,646
Missouri						
Platte	35,759	207,901	262,771	6,110,953	6,945	161,512
Clay	51,836	301,372	187,190	4,353,256	16,065	373,605
Ray	22,940	133,372	447,998	10,418,558	44,520	1,035,349
Lafayette	64,369	374,238	1,069,716	24,877,116	43,811	1,018,860
Johnson	46,250	268,895	974,221	22,656,302	92,550	2,152,326
Jackson	537,306	3,123,872	360,923	8,393,558	104,674	2,434,279
Cass	143,632	835,070	842,431	19,591,419	114,601	2,665,140
Bates	45,914	266,942	923,531	21,477,465	83,347	1,938,302
The State	4,618,572	26,852,163	55,672,669	1,294,713,232	9,198,272	213,913,302
						1,210,955,992

Table 28. Disposition of milk produced on farms in selected areas in the Kansas City marketing area, 1930.

State and County	Percentage of Total milk produced which is sold						
	As whole milk		as farm butter	as cream	As butterfat		Percentage which is used on farms
	from all farms	from dairy type farms			From all farms	from dairy type farms	
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Kansas							
Miami	9.3	49.3	.9	.1	58.2	37.6	31.5
Wyandotte	72.9	93.1	2.9	.9	3.7	1.0	19.6
Johnson	57.3	88.5	1.4	3.5	20.5	3.0	17.3
Jefferson	35.5	71.2	.8	.7	37.7	18.2	25.3
Leavenworth	72.4	90.2	1.7	.2	11.2	4.7	14.5
Douglas	35.8	77.6	1.3	1.2	38.3	13.6	23.4
THE STATE	16.2	65.2	1.7	1.2	51.6	21.2	29.3
Missouri							
Platte	15.4	72.2	3.4	1.0	30.8	6.9	49.4
Clay	38.5	84.9	3.9	1.2	17.9	4.2	38.5
Ray	12.4	60.1	3.2	.5	38.7	24.5	45.2
Lafayette	6.2	56.7	2.0	.8	53.9	29.0	37.1
Johnson	13.3	55.2	.5	.5	45.9	26.5	39.8
Jackson	70.4	88.5	1.8	3.5	9.4	4.0	14.9
Cass	33.4	73.0	1.0	1.5	34.7	15.5	29.4
Bates	12.4	56.3	.8	.6	45.2	29.3	41.0
THE STATE	18.2	53.8	2.1	.8	40.8	30.4	38.1

Compiled from United States Census of Agriculture, 1930, Volumes II and III, Part I.

Tables 27 and 28 indicate that the amount and percent sold as farm butter and as sweet cream are negligible and that the share sold as butterfat ranges from 58 percent in Miami County to 3.7 percent in Wyandotte. The percentage used on the farm is 41.0 percent in Bates County, Missouri, and only 14.9 percent in Jackson County, Missouri.

It has been shown how the type of dairying changes from a rather extensive flexible type on the borders of the supply area to a rather intensive specialized type close to the marketing area. The variations in this pattern have also been shown so that it is clear that many producers close to the market exhibit a type of enterprise more like those at the borders of the milk shed while specialized dairymen are found in limited numbers in outlying regions.

E. Relation of the feed prices and other prices to the butterfat and milk prices.

Middle western dairymen depend very largely on home grown feeds to make up their dairy rations and only supplement them to a limited extent with high protein content commercial feeds. In a market milk shed, however, the more specialized producers and those on the smaller farms close to the market cannot follow this procedure. They must buy a very considerable share of their concentrates, both high protein feeds and grains, and utilize their limited acreage for hay and pasture. So it is that the data on feed purchases, given in the last two columns of Table 21, indicate a tendency in the counties close to Kansas City for dairymen to buy more feed. It is noteworthy that, while purchases of feed averaged on all farms between 3 and 4 hundred dollars in 1929, they ranged much more widely on dairy type farms because on such farms close to the city home grown feed supplies are highly inadequate.

Undoubtedly the price of feeds in relation to the price of milk is important in determining the use made of home grown feeds, particularly on the small, specialized dairy farms close to the market, but the really important pressure for affecting milk production arises on farms in the area farther out because home grown feeds may be shifted either to dairy cattle, to beef cattle, or to hogs; and it is the relationships between the prices of milk to butterfat, of butterfat to beef, and of butterfat to pork which dominate the action of the typical corn belt farmer who produces his own feeds and puts them into that product form which will maximize his income.

In Tables 29, 30, and 31 the trends of prices of various feeds, cattle, hogs, butterfat, and Class I prices in the Kansas City, Missouri, market since April 1934 are presented. These data are also

Table 29. Prices received by farmers in Kansas and Missouri for corn, oats, clover hay and alfalfa hay and wholesale prices per ton bagged in carlots of linseed oil meal and wheat.

Year and Month	Prices received by farmers						Kansas City prices per ton bagged in carlots		
	Corn per bushel		Oats per bushel		Clover hay per ton		Alfalfa hay per ton		Wheat flour
	Mo.	Kan.	Mo.	Kan.	Mo.	Kan.	Mo.	Kan.	
	Dolls.	Dolls.	Dolls.	Dolls.	Dolls.	Dolls.	Dolls.	Dolls.	Dollars
1934									
April	.46	.39	.35	.33	9.90	6.30	11.20	7.50	34.80*
May	.48	.41	.35	.33	10.10	7.30	11.20	7.90	33.60*
June	.55	.51	.38	.36	10.10	8.20	11.20	8.90	36.30*
July	.60	.56	.39	.37	11.40	9.70	12.50	10.10	36.30*
August	.78	.79	.45	.46	16.30	16.70	18.80	17.60	44.35
September	.84	.85	.51	.52	18.00	17.50	20.30	18.00	47.85
October	.83	.86	.52	.53	16.80	18.60	19.10	19.30	44.80*
November	.87	.91	.53	.54	18.40	18.00	20.00	19.30	45.40*
December	1.03	1.05	.59	.59	19.20	17.00	21.00	19.70	48.00
1935									
January	1.02	1.02	.67	.62	19.20	17.50	20.70	19.70	47.60*
February	.98	1.00	.67	.64	19.20	17.00	20.70	19.70	43.30*
March	.95	.96	.67	.64	19.00	16.00	20.70	19.50	41.70*
April	.97	.99	.64	.62	18.70	17.00	20.10	19.50	42.86*
May	.96	.98	.58	.57	18.10	17.00	19.10	19.50	39.90*
June	.94	.95	.51	.48	16.30	12.00	16.30	13.20	35.27*
July	.96	.91	.39	.30	12.00	9.00	12.20	7.50	30.71*
August	.92	.91	.31	.32	10.40	9.00	11.30	8.70	29.78*
September	.86	.87	.32	.33	10.00	6.90	10.90	8.60	29.30*
October	.86	.87	.34	.33	10.30	7.40	10.80	8.80	31.70*
November	.66	.74	.32	.32	10.50	8.00	11.00	8.80	30.36*
December	.60	.63	.34	.31	10.30	7.60	11.50	8.70	30.96*
1936									
January	.62	.65	.33	.31	10.20	7.60	11.80	8.60	30.81*
February	.65	.67	.35	.32	10.90	8.00	12.00	8.50	-
March	.67	.68	.37	.33	10.70	7.20	12.30	8.10	-

Compiled from reports of the Bureau of Agricultural Economics. Division of Crop & Livestock Estimates.

* 37% Protein.

April 10, 1936.

Table 30. Farm price of butterfat, cattle and hogs in Kansas and Missouri, and the price of Class I milk at Kansas City, Missouri, by months.

Date	Farm price of butterfat per lb.		Farm price of Beef cattle per cwt.		Farm price of hogs per cwt.		Price per cwt. of Class I, 3.8% milk, f.o.b., Kans. City, Mo.
	Kansas	Missouri	Kansas	Missouri	Kansas	Missouri	
	Cents	Cents	Dollars	Dollars	Dollars	Dollars	Dollars
1934							
April	18	18	4.25	4.25	3.15	3.35	1.87
May	19	19	4.55	5.00	2.90	3.00	1.87
June	20	20	4.60	5.00	3.35	3.50	1.87
July	20	19	4.40	4.55	3.90	3.95	1.87
August	22	23	3.95	4.50	4.55	4.80	2.39 ^{1/}
September	21	22	4.80	5.40	6.10	6.00	2.45
October	21	21	4.25	4.90	4.90	5.10	2.45
November	25	24	4.25	4.60	4.85	5.00	2.40
December	25	25	4.30	4.85	5.10	5.10	2.40
1935							
January	27	28	6.10	6.30	7.20	7.10	2.40
February	36	35	7.20	7.50	7.40	7.30	2.40
March	28	28	7.80	8.20	8.40	8.50	2.40
April	32	32	7.70	8.00	8.20	8.20	2.40
May	24	24	7.80	8.00	8.20	8.20	2.40
June	20	21	7.10	7.80	8.40	8.70	2.15
July	19	19	6.40	7.40	8.60	8.70	2.15
August	20	20	6.70	7.50	10.80	10.50	2.15
September	23	22	7.20	7.50	10.60	10.50	2.15
October	23	23	7.10	7.40	9.70	9.80	2.15
November	28	29	6.70	7.20	8.40	8.60	2.15
December	32	31	6.80	7.40	8.70	8.80	2.15
1936							
January	32	31	6.90	7.80	9.00	9.10	2.15
February	33	32	6.80	7.50	9.50	9.60	2.15
March	28	27	6.70	7.10	9.40	9.50	2.15

Compiled from reports of the Bureau of Agricultural Economics, Division of Crop and Livestock Estimates.

^{1/} Premium included after August 1934.

Table 31: KANSAS CITY, Average Feedstuff Prices per ton bagged, in carlots,
April 1934 - January 1936.

Year and Month	Hard Winter Wheat Bran	Gray Winter Wheat Shorts	Red Dog Flour	Linseed Meal (37%)	Cotton- seed Meal (43%)	Gluten Feed	Gluten Meal	White Hominy Feed	Average Eight Feed- stuffs
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
1934									
April	17.70	19.05	20.65	34.80	30.70	19.45	29.20	16.50	23.51
May	16.60	18.70	20.45	33.60	30.10	17.90	27.70	16.50	22.69
June	20.05	21.05	23.95	36.30	33.30	20.10	28.35	19.20	25.29
July	19.50	24.35	28.35	36.30	36.15	21.20	29.20	21.50	27.07
August	22.55	27.90	32.00	44.35	43.90	26.40	36.15	29.25	32.81
September	22.75	28.05	32.75	47.85 ^{1/}	44.25	29.10	39.10	31.00	34.36
October	21.10	27.05	32.35	44.80	43.95	29.60	39.50	28.40	33.34
November	23.50	30.75	34.90	45.40	46.55	31.00	41.00	32.00 ^{2/}	35.64
December	27.85	31.10	37.15	48.00	46.45	35.05	43.15	36.80	38.19
1935									
January	36.20	28.55	34.45	47.60	42.70	34.15	41.15	32.65	35.93
February	26.05	29.05	33.75	43.30	41.70	31.85	37.60	31.25	34.32
March	26.80	29.05	32.80	41.70	39.55	27.45	31.70	31.15	32.52
April	26.80	30.95	33.65	42.36	39.81	24.65	30.45	30.50	32.40
May	25.06	29.13	31.44	39.90	38.03	25.45	28.45	31.00	31.06
June	19.75	26.44	30.38	35.27	35.29	24.45	27.95	27.13	28.33
July	16.75	20.55	28.10	30.71	32.78	22.25	26.65	26.50	25.54
August	15.38	20.75	28.44	29.78	29.08	21.20	23.95	26.50	24.38
September	14.69	22.25	32.06	29.30	27.95	19.95	22.45	26.56	24.40
October	14.85	21.25	29.40	31.70	31.30	22.00	28.00	23.95	25.31
November	15.50	19.19	28.25	30.36	30.95	23.83	30.70	22.75	25.19
December	16.00 ^{2/}	22.00	28.50	30.96	30.10	23.75	29.30	23.50	25.51
1936									
January	16.56	20.25	25.63	30.81	28.98	21.39	29.58	22.69	24.49

Compiled from reports of the Bureau of Agricultural Economics, Division of Hay, Feed and Seed.
1/ 34% Protein. 2/ Estimated.

presented in graphic form in Figures 3, 4, 5, and 6. Feed and corn prices after having increased considerably during 1934 declined, at first gradually and then in the summer of 1935 very sharply. They have shown some improvement since November. Butterfat prices did not increase in 1934 to the same extent as did corn and feed prices nor did they fall in 1935 so sharply. And since July 1935 they have shown a more rapid rise than feed prices and, at the present time, appear to be favorable relative to feed and corn prices.

The Class I price of milk in this area has not fluctuated to the extent that the farm price of butterfat has. (The reason for this has been presented by Gaumnitz and Reed. See Appendix A.) During the flush season of production in 1935, i.e., April, May, and June, there was a wide discrepancy between the two prices but recently the spread has narrowed considerably. Although the Class I price is not, because of the many other expense factors connected with the production of such milk, so closely related to feed prices as the farm price of butterfat, the purchase of feed is a principal out-of-pocket expense for dairy farmers and it is well to note that the Class I price of \$1.87 appears to be favorable relative to the price of feed. (See Figure 6.)

During 1934 and early 1935, butterfat prices did not appear unfavorable relative to hog and cattle prices. During the period February to July 1935, butterfat prices showed a marked decline, and appeared unfavorable relative to hog and cattle prices. This unfavorable situation has bettered somewhat but not fully, despite the sharp increase in butter prices. Cattle prices showed only a slight fall and hog prices continued to rise until August. Since December 1935, hog, cattle, and butterfat prices have tended to increase.

F. Seasonal variations in milk production in the supply area.

The wide seasonal variation of the milk supply in the area about the Kansas City market has a marked effect on the handling of milk in the area. While no monthly figures are available for total production the variation in deliveries to 13 butter and cheese plants in the supply area gives a rather good measure of this variation. Table 32 shows that in May 1934 there was twice as much milk delivered to these manufacturing plants as in December. Deliveries of fluid milk to the Kansas City market in 1934 also showed a wide seasonal range in May deliveries, being 1.49 times as much as those of December. Class I milk in the market does not vary markedly from season to season so that there is at times only a small amount of surplus milk, while at other times there is considerably more than is needed.

During the Spring months, when this surplus begins to mount, those producers who have a rather uniform supply have their market

Figure 3: Index Numbers of Prices Received by Farmers for Butterfat, Corn and Alfalfa Hay in Missouri, April 1934-January 1936.

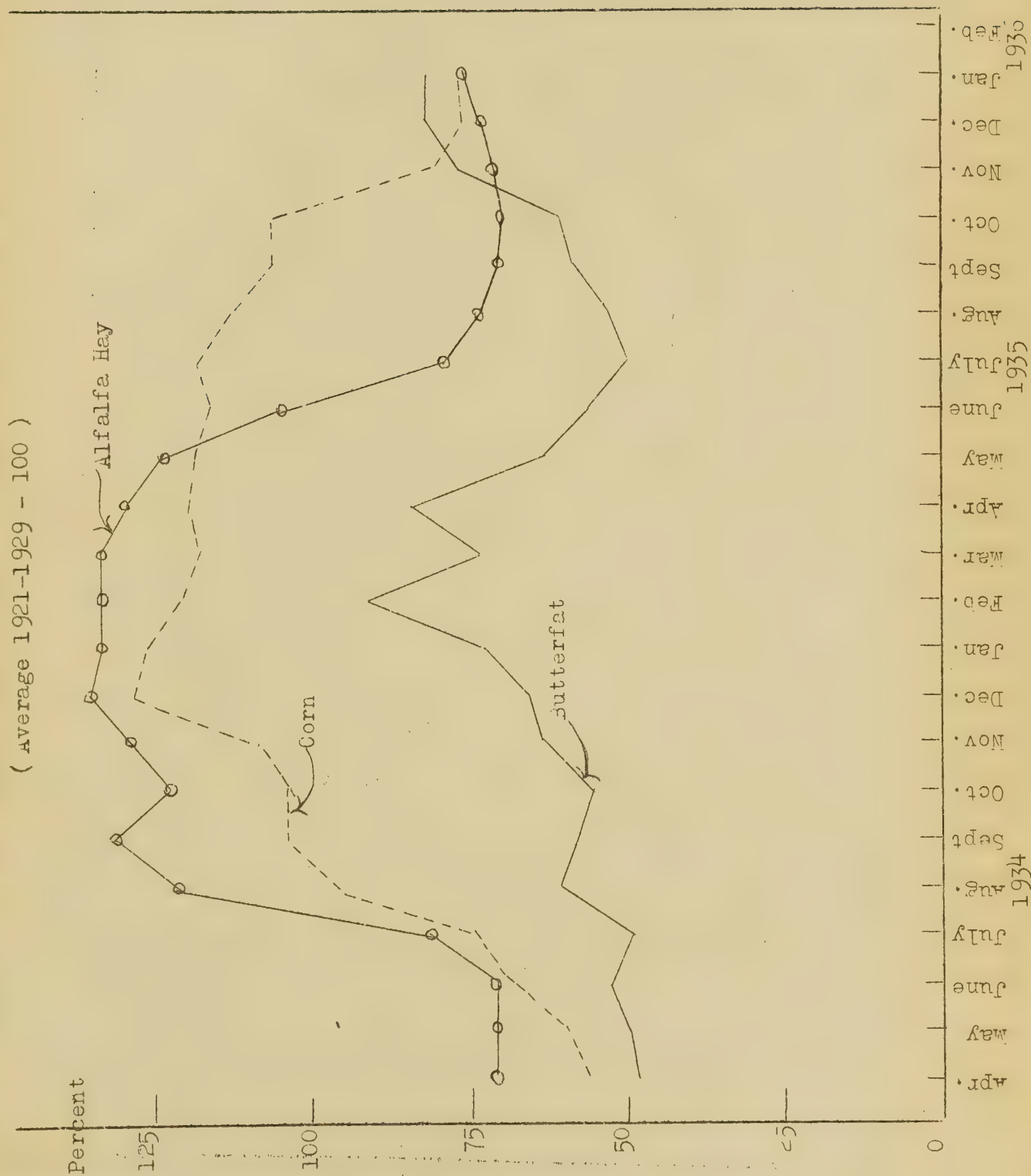


Figure 4: Prices paid to producers for 3.8% Class I milk, delivered F.O.B. City, in the Kansas City, Mo., marketing area and the average prices received by farmers in Missouri for butterfat sold.
April 1934 - January 1935

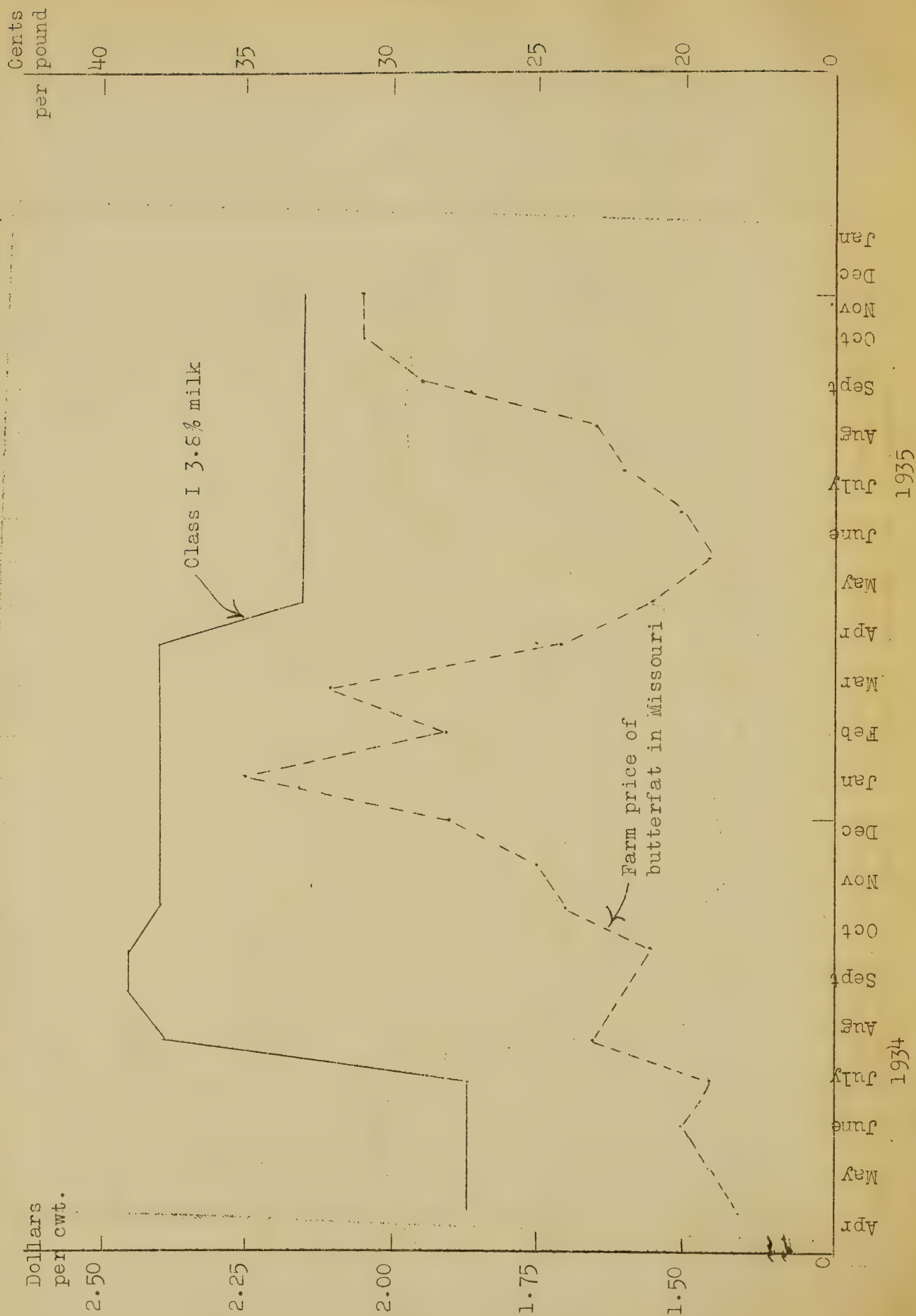


Figure 5: Index numbers of prices received by farmers for butterfat, beef cattle and hogs in Missouri, April 1934-January 1936.

(Average 1921-1929 = 100)

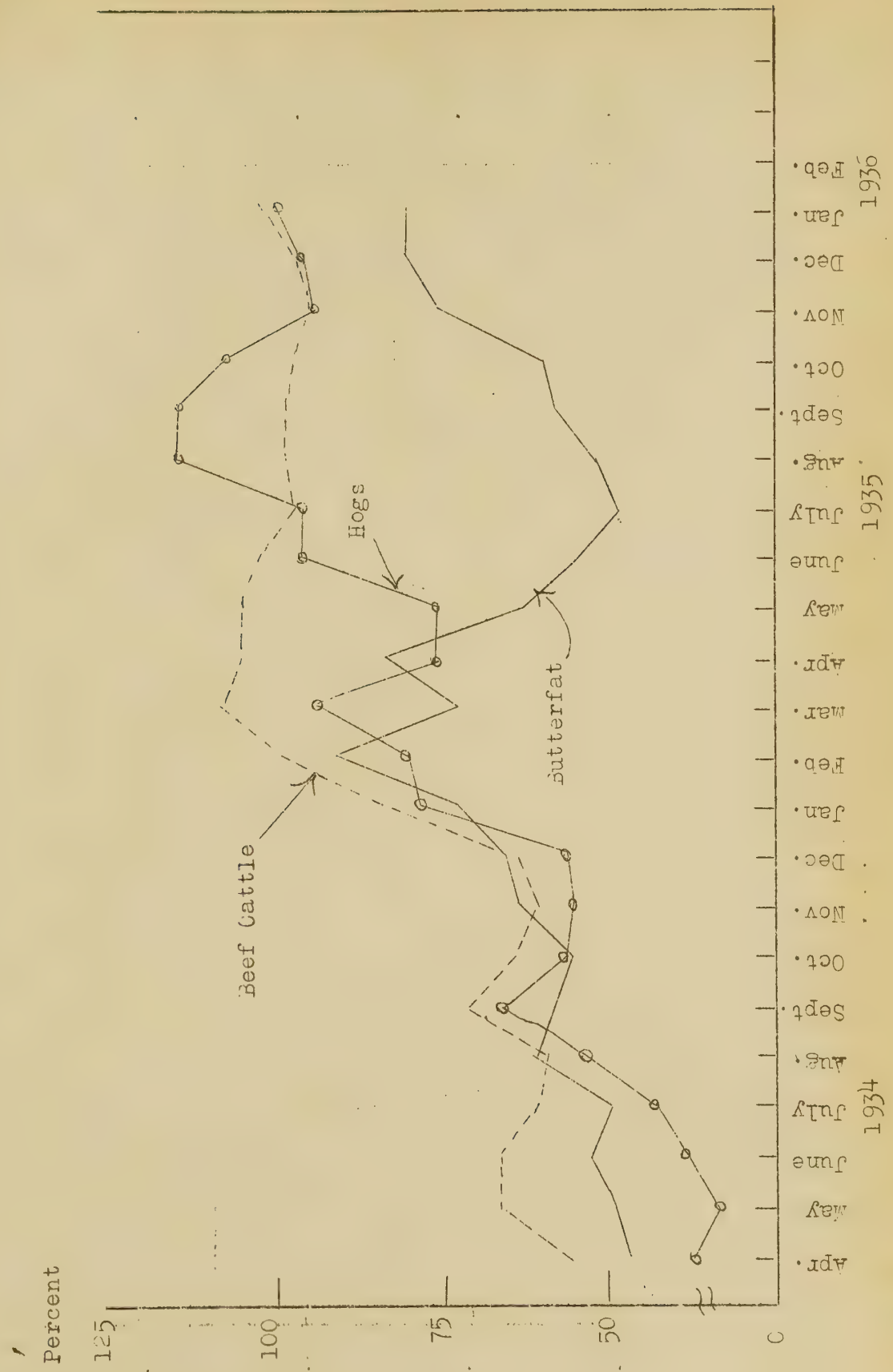


Figure 6: Prices paid to producers for 3.8% Class I milk per hundredweight, delivered F.O.B. City in the Kansas City, Mo. marketing area and the average wholesale price per ton of 8 feedstuffs in Kansas City, April 1934 - January 1936

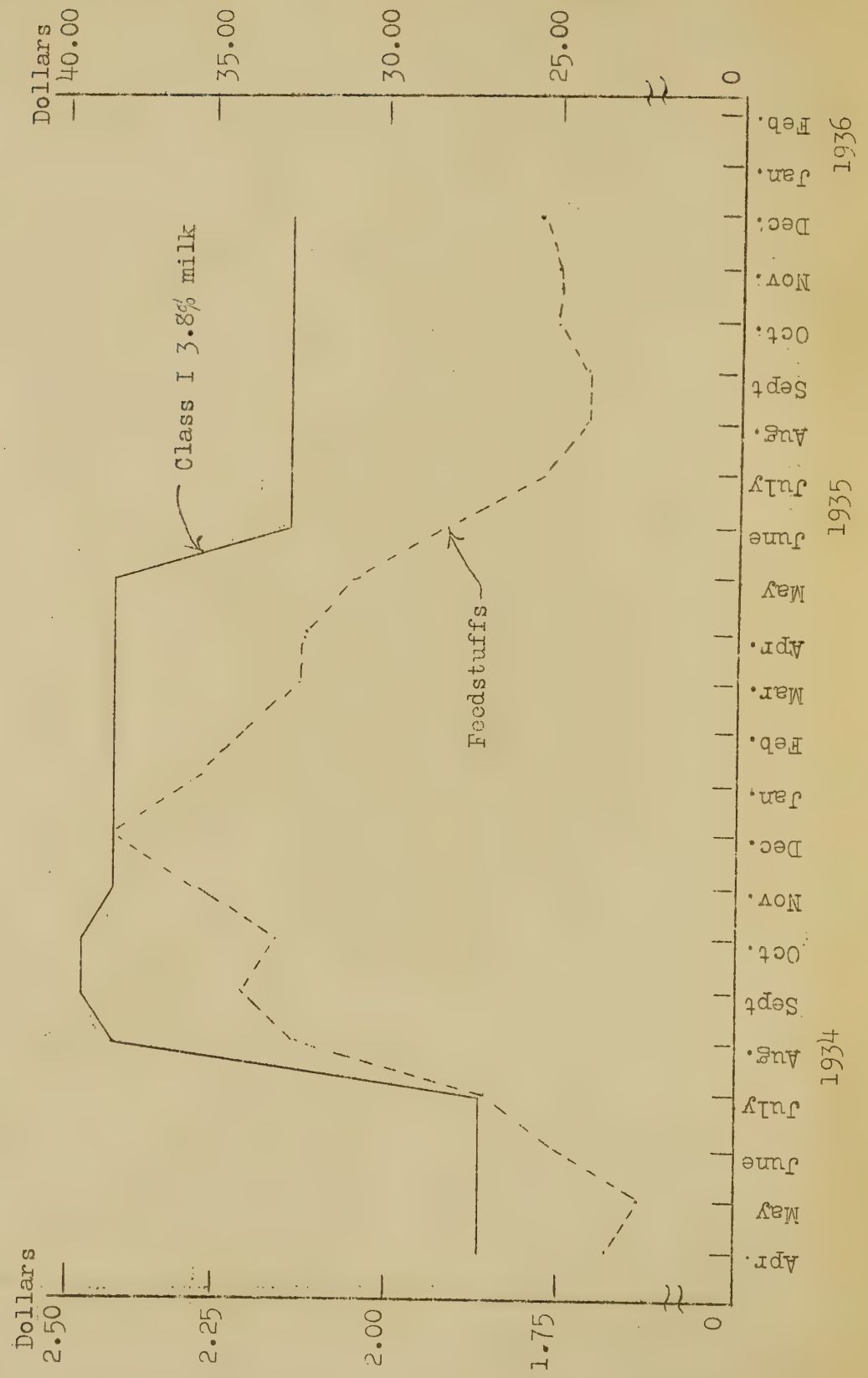


Table 32: Seasonal variation in the total volume of thirteen butter and cheese plants in the Kansas City Supply Area in 1934.

Month	Total milk equivalent received	Percent of total milk equivalent	Seasonal Variation in percent of average
	Pounds	Percent	Percent
January	15,007,696	6.9	82.3
February	13,504,395	6.2	74.1
March	16,457,314	7.5	90.3
April	19,883,151	9.1	109.1
May	28,920,355	13.2	158.6
June	25,266,499	11.5	138.6
July	19,373,298	8.9	106.3
August	15,198,789	6.9	83.4
September	15,813,500	7.2	86.7
October	17,255,967	7.9	94.6
November	17,677,193	8.1	97.0
December	14,403,008	6.6	79.0
Total	218,761,165	100.0	1200.0

Calculated from records of the Bureau of Agricultural Economics,
Division of Dairy and Poultry Products

connections threatened by floods of cheap milk from producers farther out who would like to sell their milk as fluid milk. The effect of this competition would not be serious were it not for the fact that certain producers and certain distributors do not take a long-run view of their own best interest and are often forced to get milk where it is cheapest even though they may later find such action a handicap.

G. Channels through which milk moves to the market.

1. Country stations.

Country stations which supply milk to the Kansas City market are located at three points, as shown in Figure 2. They are listed here as follows:

<u>Location</u>	<u>Distance to Kansas City</u>	<u>Present status</u>
Butler, Mo.	67 miles	Operating
Pleasant Hill, Mo.	35 "	"
Eudora, Kans.	35 "	Closed

These country stations have been operating for many years in the market and are considered to render valuable services to the producers. It is estimated that about 20 percent of the total deliveries in the market pass through these country stations. When the Federal license went into effect in March 1934 there was general dissatisfaction with the low deduction allowed at country stations and it was necessary to amend this feature on April 1, 1934. In this amended license the Butler plant was allowed to retain 21-1/2 cents per hundredweight for both Class I and Class II.

The station at Pleasant Hill is the only one of these country stations which manufactures any dairy products, as the rest have nothing more than receiving and cooling facilities.

2. Transportation.

The milk supply of the Kansas City market comes in by truck entirely. No milk comes in by rail. The milk which is delivered to the three country stations is first cooled and then hauled in on bottle trucks. Taking all the milk on the market into consideration, 85 percent is brought in by commercial haulers, 10 percent is brought in on trucks owned and operated by distributors, and 5 percent is hauled in by farmer producers.

Charges for hauling milk vary considerably, depending on the load, distance, type of roads, volume per producer, and the general

bargaining power of the producers on routes. The range is from 20 cents to 40 cents per hundredweight on twice-a-day delivery and from 15 cents to 35 cents on once-a-day delivery, with an estimated average of 27 cents per hundredweight.

During six months of the year city health regulations require that all milk must be delivered twice a day. This adds to hauling costs. It seems likely that, in view of the low volume of deliveries per producer per trip, the hauling charges are reasonable and the system adequate.

Very little butter and no sweet cream, made from the milk of regular producers of fluid milk, are shipped out of the market. When there is a surplus it is made into butter which is sold locally. At no time since March 1934 has milk or cream for Class I or Class II use been shipped into the market other than from regular producers.

H. Marketing organizations.

1. Producers' organizations.

Two associations of producers of wholesale milk are in existence on the Kansas City market. These are the Pure Milk Association and the Bates County Producers; together they supply about 91 percent of the wholesale milk delivered to the market.

Both these associations are strictly bargaining associations. The Pure Milk Association was incorporated in 1929 and has served as the chief representative of producers on the Kansas City, Missouri, market during the depression period.

The Bates County Producers was re-incorporated August 30, 1935, having existed for several years previously under other names.

In addition to these two organizations of producers of wholesale milk there is also an organization of producer-handlers called Independent Dairies, Incorporated, which has 150 members. It is estimated that there are now 298 producer-handlers on the market. Nearly half the milk in the market is distributed by producer-handlers.

In December 1935 there was a total of 1,282 producers of wholesale milk. Herds of wholesale milk producers had a daily output of about 110 pounds whereas producer-handlers' daily output per dairy was approximately 400 pounds.

2. Handlers in the Kansas City, Missouri, Marketing Area.

In December 1935 there were 12 pasteurizing handlers on the Kansas City, Missouri, market and 298 producer-handlers, according to estimates by the market administrator. The number of pasteurizing handlers on the market has declined since early 1935 from 15 to 12 in December. The three handlers who are no longer operating had a total of 37 producers.

The number of handlers of wholesale milk on the Kansas City market, when compared with most markets of similar size, is relatively small with the average amount of milk handled per firm large. Four of the twelve firms receive milk from less than 50 producers, four receive milk from 50 to 100 producers, two have from 100 to 200 producers, and two have from 200 to 300 producers. The four largest handlers supply about 70 percent of the wholesale milk on the market. The fact that almost 50 percent of the milk is delivered by producer-handlers presents a strong competitive factor in the market.

Part VIII

Conclusions Relative to the Minimum Prices to Producers as Set Forth in the Proposed Marketing Agreement and Proposed Order

A. The Class I price.

The Class I price of \$2.00 per hundredweight, provided by the proposed marketing agreement and proposed order, is designed to result in a price for Class I milk that, in view of the current supply conditions, will adequately compensate producers for the production of such milk.

With employment, payroll totals, and other indications of demand at a high level, it is expected that the consumption of fluid milk will tend to increase at that price.

In view of the better demand conditions and of the relatively more favorable cattle and hog prices, the minimum Class I price proposed is somewhat higher than that now provided in Federal license No. 40. However, in view of the increased supply of milk per day per dairy in the market in January 1936, as compared with January 1935 and of lower feed prices, the proposed price is not so high as the minimum Class I price plus the premium now being paid for such milk by the handlers in the market.

B. The Class II price.

Because handlers do not require the same evenness of supply of Class II milk as they do for Class I milk and because consumers are not so insistent upon having as high a quality product for milk used in cream as they are for milk used in fluid milk, a reasonable minimum price for such milk appears to be \$1.70. Such a price is more in line with the prices paid for uninspected cream which is sold on the outskirts of the marketing area. Some premium, however, is allowed for the better quality of inspected cream and for the more adjusted supply of such milk by fluid milk producers.

C. The Class III price.

It is proposed that the method of determining the Class III price be changed from that of a formula based on 92-score butter sold wholesale in Chicago to that of accepting the highest bid submitted and approved by the Secretary for any such milk that any handler might receive from producers during the next succeeding delivery period.

The reason for this change is that some processors of milk, namely, creameries and ice cream manufacturers, in the supply area are and have been willing to buy milk at a premium over the Class III price as calculated according to the formula. With these alternative outlets for such milk offering a good price for milk, the handlers of such milk should be willing to pay at least an equivalent price.

Because at times the Class III price has been below the market value of such milk, handlers having such milk have had no inclination to part with it. This exerted a tendency to an extension in the milk shed which, in view of current supply and demand conditions, should not take place. There is some difficulty in producers shifting their markets and thus to distribute the available supply more economically in the market because most of the milk is brought to the city in handler-owned or handler-controlled trucks.

The plan proposed for pricing the milk is considered to be one that will return to producers the highest price that any processor or handler is willing to pay for such surplus milk and thus to return to producers the full market value of their surplus milk.

D. Class price adjustments.

1. Country station and transportation.

The proposed marketing agreement and proposed order provide that, with respect to all Class I and Class II milk delivered by producers to handlers at plants outside the Kansas City, Missouri, Marketing Area, prices shall be subject to the following adjustment: If a handler's plant is located more than 30 miles from the City Hall in Kansas City and not more than 45 miles, \$.17 per hundredweight, and, for each additional 10 miles or part thereof, one and one-half cents per hundredweight.

The \$.17 per hundredweight allowance in the 30-45 mile zone represents an allowance to cover the handler's costs of operating the station and for shipping such milk to the city. The additional deductions for each additional 10 miles or part thereof represent the additional transportation costs necessary to ship milk to the city from these distances.

At these country stations milk is cooled and prepared for shipment to market. Because the milk of many producers can be collected, these operations of cooling and preparing for market can be done much more economically than if each producer had to set up his own cooling system. In addition, a much more economical transportation system can be established by having all the milk of a section collected at one place and shipped as a unit. These services are of real value

to producers for which they should be and are willing to pay. However, if they prefer, they may haul their milk to the city themselves.

All of the milk for use as fluid milk and cream is brought to the marketing area as fluid milk. There are at the present time two country stations operating in the area and handling approximately 16,000,000 pounds of milk per year, which stations are subject to this adjustment.

In the licenses of March 16 and April 1, 1934, the station charge allowed, for stations 30 miles from the City Hall, was \$.10 per hundredweight on Class I milk with only one cent additional allowance for each additional 15 miles. This allowance was found to be inadequate. It did not cover the actual costs of operation of the stations and, in addition, it had been the custom in this market for Class II milk to be delivered as whole milk to the marketing area. Hence, on July 16, 1934, the allowance was changed to \$.17 per hundredweight on both Class I and Class II milk, with a one and one-half cent per hundredweight additional allowance for each 10 miles or fraction thereof over 45 miles.

The greater portion of the milk received in the marketing area does not pass through country stations but is hauled direct from farm to city. The hauling facilities are largely in the hands of contract haulers who have built up milk routes over a considerable period of time. Such routes are well established and are considered strong assets of the trucking companies. It is one of the fundamental principles of the proposed marketing agreement and proposed order that handlers shall pay for their milk at the same prices in each use classification. In order that such a principle can be carried out economically and efficiently, it is necessary to price the milk to handlers at that point where they take title to the milk, or to fix the price at one point for all handlers and to set the allowances that they will be allowed to take from the point at which they do take title to the point at which the price is set. The Class I and Class II prices proposed are f.o.b. the city, so the maximum allowances to handlers for operating a country station and shipping the milk to the city are established. If a handler were allowed to make an excessive charge for operating his station and trucking the milk to the city, he would, in effect, be getting his milk at a lower price than the handler who took title to the milk f.o.b. the city. Any excessive charge made by commercial haulers does not affect the price of milk to handlers and so no provision for these rates needs to be provided in the proposed marketing agreement and proposed order.

2. Outside market sales.

The Kansas City, Missouri, Marketing Area is defined as including only that area within the corporate limits of Kansas City, Missouri. Some handlers who operate in the marketing area distribute some milk outside the area, especially in the residential section of

Country Club and Mission Hills. The health requirements for milk in these areas are not so rigid as those in the marketing area; but these areas represent a good market for fluid milk, however, and, in order that handlers regulated under the proposed marketing agreement and proposed order can compete for such business, provision is made for handlers to pay for Class I milk sold in outside areas at a price which the market administrator ascertains is being paid in the market where such milk is sold by processors and handlers of milk of equivalent use.

There is a reasonable adjustment allowed for transportation from the plant where such milk is secured from producers to the plant where such milk is loaded on wholesale and retail routes.

Part IX

Equitable Apportionment of Fluid Milk and Cream Sales Among Producers.

A. Pooling of all proceeds from the sale of milk to handlers.

The Agricultural Adjustment Act, as amended, provides for two methods of payments to be made to producers. The first of these is for all handlers to pay all producers in the market a uniform price for milk of the same grade and quality. The second of the methods is for each handler to pay a uniform price to all his producers in the market for milk of the same grade and quality.

There is provided in the proposed marketing agreement and proposed order the first plan whereby the total proceeds from the sale of all milk of producers to all handlers are pooled and then equitably apportioned among all producers. As the classification of milk according to use and payment of milk according to classification has put all handlers on the same equitable competitive basis with respect to the prices to be paid producers for milk by requiring all handlers to pay the same price for milk used in each use classification, so this plan of equitably apportioning the proceeds of milk among producers puts all producers on an equal competitive basis with respect to the prices received for their milk. It is simply an extension of the plan commonly used by each handler, and by cooperative organizations. If a creamery sold 75 percent of its milk as Class I and Class II and 25 percent as Class III, it did not pay 75 percent of its producers the Class I and Class II price and 25 percent the Class III price. Such a method obviously would not have been equitable and producers would have objected strenuously. Gaumnitz and Reed have shown ^{1/} that it is natural to expect that if some producers who meet the health requirements and production standards required for Class I and Class II milk do not get a share of that market, they will undertake to do so.

Cooperative organizations have recognized this problem and have attempted to give all such producers an equitable share of the fluid milk and cream market.

In the Kansas City, Missouri market the cooperative has tried to accomplish this end by a more formal recognition of the fact that even the producers whose milk meets the health requirements of Kansas City milk in the long run would become associated with those handlers highly specialized in the fluid milk and cream trade by actually shifting their producers from one handler to another so that the Class I and II milk would be more equitably apportioned among producers. However, because of the difficulty of shifting producers due to their location and because of the varying amounts of such sales by handlers, such means are not always practicable or complete in their effect. The proposed marketing agreement and proposed order provides for a plan which will effect what would be the result in the long run

^{1/} See Appendix A.

if economic forces were allowed to work themselves out to their fullest extent, i.e. by giving to every producer who is entitled to a share in the Class I and Class II market his share in the apportionment of the proceeds of milk in that market.

The prices provided in the proposed marketing agreement and proposed order have been shown in the analysis to be prices which are fair and reasonable. It is thought that they will adequately compensate producers and not be burdensome to consumers. It has been shown also that some premium must be paid by handlers for milk meeting the better quality standards and of more even production than is paid for milk used for manufacturing.

In a stabilized market there would be but one price for all the milk produced and demanded in each of the various classes provided in the proposed plan. But in practice for many reasons such as the wide repatriation of producers and probably, because of their location, with only one outlet for their milk there have been almost as many individual prices in milk markets as there have been transactions. Such conditions create unstability in a market with no way of anyone determining what the actual value of milk is in the market. The prices proposed are an attempt to set out the price which will clear the market for each class of milk and in this way establish a stability and efficiency not possible otherwise.

The milk from some producers in the market is not needed at all seasons of the year yet it is necessary that such producers be completely equipped and inspected the whole year in order to produce milk of the required quality in the seasons when their milk is needed. In order that these producers will go to this expense and trouble they must be allowed and are entitled to share in the fluid milk and cream market during the whole year. Reed and Gaumnitz have shown that if such is not the case the seasonality of prices would be very marked and would cause much disturbance in the market. Besides the competition of such producers for the market there is the competition for the market by new producers who have so adjusted their production and are producing such quality of milk that they are now desirable producers for fluid milk handlers. Then, too there is the competition of those few who as in other businesses prefer making individual gains at the expense of others to having a stable market. Some of this competition is desirable and such constructive competition is fostered by the plan and not curbed by the destructive competition. Experience has shown that much of the competition is bound to be destructive and it is such competition that must be regularized.

One reason for destructive competition is the desire to pass to others the expense of carrying the excess of milk which is necessary in the market. There is needed at all times during the year some excess milk to cover the daily fluctuations in the sale of fluid milk and cream. Then in the flush season of production there is a considerable amount of such excess milk produced in the market. It has been shown by Gaumnitz and Reed that it is an ineffective procedure in the market as a whole to attempt to get rid of the excess milk by lowering the price. Such a dropping of the price might also deter producers from making necessary

improvements in their equipment and even from continuing to produce enough milk for the market in the short season of production. With so much excess milk in the market at certain times of the year and some excess at all times, certain producers are inclined to pass to others the expense of carrying the surplus.

These producers are willing at times even to cut prices below what is actually needed by them to cover their operating expenses in order that they might get a larger share of the fluid milk and cream market. Such a condition as this incites destructive price cutting by other groups and creates a very unstable market.

The lack of any efficient plan for the equitable distribution of fluid milk and cream sales among all producers has been a principal cause of the unsatisfactory conditions in the Kansas City, Missouri Marketing Area and has led to destructive competition among handlers and producers. This plan is not to eliminate competition but to regularize it. All the factors that handlers and producers consider in their bargaining for prices have been considered here and brought to light so that all in the market can see them clearly.

Producers, by cutting prices in the market through cooperative effort and through the handlers of their milk can gain for a time an advantage. A few examples will be sufficient to illustrate this situation.

Assume that the Class I price is \$2.00 and the Class II price \$1.50 and the Class III price \$1.00. Assume also that the sales of fluid milk in the market are 60 percent of total sales, sales of Class II 20 percent, and sales of Class III 20 percent. Then a group of producers in the market carrying its share of the surplus would receive per hundredweight the following:

60 pounds as Class I	@	\$2.00	--	\$1.20
20 pounds as Class II	@	1.50	--	.30
20 pounds as Class III	@	1.00	--	.20
Composite price per hundredweight			--	\$1.70

In order that all producers will continue to deliver enough and the right quality of milk required for Class I and Class II, it is assumed that they must receive at least \$2.00 and \$1.00, respectively. But, in the short run, with a fixed investment, this group of producers decides that by cutting its Class I price in the city it can get rid of some of its surplus milk which it does not need to cover the daily fluctuation in sales. If it sold half its surplus milk for fluid milk to "chiseling" handlers at a price of \$1.75, which is somewhat below the established Class I price but above the Class II price, and yet continue to get \$2.00 per hundredweight from its regular customers (a practice not uncommon in many milk markets, particularly in the wholesale trades), then the return to these producers would be:

60 pounds as Class I	@	\$2.00	--	\$1.20
10 pounds as Class I	@	1.75	--	.175
20 pounds as Class II	@	1.50	--	.30
10 pounds as Class III	@	1.00	--	.10
Composite price per hundredweight			--	\$1.775

This group will thus have undersold the market and yet, by so doing, will have increased its composite price to producers by \$.075 per hundredweight. If the producer were selling to a handler he might refuse to pay the full increased returns and pocket the increased return.

But this group could increase its Class I sales, assuming no increase in total Class I sales in the market, only at the expense of other producers in the market. The other group of producers in the market would now receive only:

50 pounds as Class I	@	\$2.00	=	\$1.00
20 pounds as Class II	@	1.50	=	.30
30 pounds as Class III	@	1.00	=	.30
Composite price per hundredweight				<u>\$1.60</u>

More than likely, however, in order to retain its fluid milk sales and maintain its price to producers, this second group, as all others similarly threatened, would lower its price to whom the cut-price milk was offered. Eventually, before the cut-price group finally succeeded in selling the milk, it might have offered it to several customers and thereby have forced down the price on fluid milk sales on many times the volume of milk which it has to offer. In this way the price for fluid milk in the whole market is forced down to a lower level. It is by this method that competition forced the price of fluid milk down to a point where the quality and amount of such milk was jeopardized. The proposed marketing agreement attempts to eliminate such practices among handlers by requiring them to pay for the milk according to the use made of it and among producers by equitably distributing the proceeds of sales among all producers in the market.

The actual operation of the plan to apportion sales among producers works exactly as if all handlers paid into the market pool the total value of: (1) their Class I milk times the Class I price plus (2) the Class II milk times the Class II price plus (3) the Class III milk times the Class III price. The total amount of this pool is then divided among producers according to some equitable plan, which, for this market, is a base-rating plan. The market administrator's office acts merely as a clearing house for the transactions.

There remains room for competition among producers to make additional gains for themselves through superior quality and efficiency because the prices established are minimum prices. And after the milk has passed the receiving room door the handlers and cooperatives compete with each other on the basis of efficiency and any gains so made are not shared with the rest of the market.

The actual mechanics of computing the total value of the pool is provided in Article VI and Section I of Article VII of the proposed marketing agreement and proposed order in the following manner:

The provisions of article VI of the proposed marketing agreement and proposed order relate to those handlers who are also producers.

Section 1 provides that in the case of handlers who are also producers, and purchase a part of their milk from other producers, the market administrator shall, before making the computations necessary for the determination of the amounts to be paid to those other producers, (a) exclude the amounts of milk purchased from other handlers, (b) exclude from their Class I and Class II milk 95 percent of their own production, and (c) exclude from their Class III milk the other 5 percent of their own production. The division of the producers' own production into two parts, one containing 95 percent and the other 5 percent -- 95 percent being excluded from Class I and Class II sales while the 5 percent is excluded from Class III sales--is justified by the fact that an estimated 5 percent of the milk produced on the handlers' own farm may be lost in waste and shrinkage and that it would not be reasonable for the market administrator to allow the handler such waste and shrinkage, from his Class I and Class II sales in calculating such handler's payments to producers. Since all other handlers purchase milk in a specified way from producers, and since the milk produced by a handler is necessarily intermingled with what he may buy, it is necessary to specify the relation between milk produced and milk purchased.

Section 2 provides that milk sold in bulk by a handler who is also a producer to another handler, which is sold or used as Class I or Class II milk by the purchasing handler, shall, in arriving at the amounts to be paid for it by the purchasing handler, be multiplied by the difference between the Class III price and the Class I or Class II price, as the case may be, and the resulting amount shall be added to the total value of milk otherwise computed. A justification for the treating of producer-handlers in this way is given in a following section.

Article VII of the proposed marketing agreement and proposed order is purely administrative in nature but necessary in order to set forth definitely the procedure by which the market administrator is to translate the class prices into uniform prices to all producers, with the adjustment to apportion equitably among producers the total value of milk for each delivery period according to production during a representative period of time.

Section 1 of this article provides for the computation of the total value by classes of all the milk purchased by any handler to determine his total obligations to producers for milk purchased. This done by combining into one total the obligations computed for all handlers who are not in arrears as to any payment for the previous delivery period. Thus is made up the total market pool or the total amount of money to be distributed by means of the uniform prices. If a handler should fail to pay into the market administrator that part of his total obligation which is to be paid to producers by way of the market administrator, the paying out of the pool will be reduced by that amount. If a handler has so failed in one delivery period, it is reasonable to expect that he may repeat his failure in the next. Experience in operating market pools under licenses has shown that handlers will tend to make their reports and then fail to make the payments, making necessary a further guide to the makeup of the pool than that of having a report in hand. Such a procedure, prescribed for the market administrator, in no way relieves the handler in his violation of the order, penalties for which are provided in the Agricultural Adjustment Act, as amended.

The next step in the process is to provide the means by which this total pool shall be paid out to producers. To accomplish this a base-rating plan is proposed.

B. Base-rating plan proposed

Section 4 of article VII of the proposed marketing agreement and proposed order provides for a base rating plan for the purpose of paying out to all producers according to production during a representative period of time, the total value of milk for each delivery period. The base of each producer is proposed to be a quantity of milk for each delivery period calculated as follows:

1. Effective from the effective date of the marketing agreement and order up to and including June 30, 1936, multiply by the number of days on which each producer delivered milk in bulk to handlers during each delivery period, that figure which is obtained by dividing the total milk delivered in bulk to a handler during the period of time November 16, 1935 to February 15, 1936 inclusive by the number of days such producer delivered milk in that period, and take such a percentage of the result as will make the total of such figures for all producers approximately equal to 115 percent of the average Class I and Class II milk per day sold during the fourth calendar quarter of the calendar year 1935 by handlers to whom such milk was delivered.
2. Effective for each calendar quarter subsequent to June 30, 1936: Multiply by the number of days on which such producer delivered milk in bulk to handlers during the delivery period that figure which is obtained by dividing the total deliveries of each producer not in excess of his base during the next preceding calendar quarter by the number of days in the next preceding delivery period and multiplying by such a percentage as will make the total of the figures for all producers equal to 115 percent of the average Class I and Class II milk per day sold during the fourth calendar quarter of the next preceding calendar year by handlers to whom such milk was delivered.
3. If a producer who is not a handler did not deliver milk during the period on which the base is to be established then the base for such producer shall be eighty-five percent of the total milk delivered by him in bulk to handlers during the delivery period.

Heretofore the discussion has shown that all milk in the market is priced to handlers in accordance with the purpose for which the milk was used by them, and that all proceeds from the sale of milk are pooled. The economic basis for such pooling and pricing has been pointed out in detail in previous discussion and in the paper by Gaumnitz and Reed in Appendix A. The next step in the proposed marketing plan is to provide some means of equitably apportioning the proceeds of the sales of all milk of all handlers in the market among all producers in the market.

The plan proposed is the type of plan commonly known as the "base rating" or "base surplus" plan. This plan provides a means by which each producer shares equitably in the fluid milk and cream market. It has been pointed out that in most markets the sales of fluid milk and cream vary much less on a seasonal basis than does production. Hence during the short season of production milk produced in the supply area is more nearly equivalent to the fluid milk and cream needs of the marketing area than is the case in the flush seasons of production when production is considerably in excess of fluid milk sales. The production of individual producers making up the total production of the market varies markedly with respect to seasonality of production.

Many producers who have long been producing milk for fluid milk consumption produce a fairly constant volume of milk throughout the year and hence their milk is much more acceptable to the fluid milk distributor because then he does not need to carry any excess milk with the accompanying expense of equipment to utilize such milk nor does he need to incur expense and trouble of adding producers in short seasons and dropping them in flush seasons. He can adjust his purchases of milk to his fluid milk and cream sales much more economically and efficiently. Hence the calculation of a producer's base on the basis of a season when production is short and milk is more in demand by handlers for the fluid milk and cream trade is an equitable means of prorating the proceeds of fluid milk and cream sales to producers for it is only that amount of milk that he can be depended on to produce every month of the year.

Producers are at liberty to increase or decrease their production of milk at any or all seasons of the year. It is probable that some producers will find that it is profitable for them to produce more milk in flush seasons and others will find it more profitable to produce more milk in the short seasons. Others may find it more advantageous to produce an even flow of milk throughout the year. It is the production of this last group of producers which is of greatest demand among handlers. The percent of feed purchased, the percent of cattle purchased, and the type of farming practiced by a producer, or some of the factors that will determine which is the most profitable seasonality of production for him.

That the base-rating plan is a commonly accepted market mechanism is evidenced by the large number of milk markets wherein the proceeds of sales to handlers are prorated to producers through the base-rating plan. On the basis of available information, it appears that the base-rating plan was started in Baltimore, Maryland, in 1918. Since that time, the base rating plan has been instituted in a large number of important milk markets, and has come to be recognized as an equitable method of prorating to producers the proceeds of sale to handlers. (See Table 33.) Table 34 shows the number of markets operating under the base-rating plan, by years, 1918 to 1934. The use of this plan of prorating to producers the proceeds of sales to handlers spread slowly and by 1929 ten markets were operating under the plan. By 1933, the number of markets operating under the plan had increased to 27, and in 1934, 34 markets were operating under the plan. The development of the base-rating plan has not been limited to any one section of the country.

According to the figures given in Table 33 markets in 17 States were operating under the plan. The States included, among others, such widely separated States as Massachusetts, California, Georgia, Oklahoma, and Michigan.

As was indicated in Part IV (see Table 7) the production of milk for the marketing area has been at all times in excess of the fluid milk and cream requirements and at times runs much higher than is required to meet the daily fluctuation in demand for fluid milk and cream. The average amount of surplus in the market during the year 1935 has been about 15 percent. Such an excess is considered to be adequate to take care of any fluctuation in sales. Thus if producers would supply at all times of the year 115 percent of the Class I and Class II sales there would be a very economic and efficient handling of milk in the market.

The base-rating plan is not a new feature in the Kansas City, Missouri Marketing Area. The benefits of such a plan were recognized and such a plan adopted by the Pure Milk Producers Association in January 1931, over two years before any Federal program was proposed for the market.

Each producer was allowed to make his own base for the calendar year 1931 which was to be the average of his production in October, November, and December 1930. The total amount of the sales of this production would constitute the amount of base milk in the market for which handlers were to pay the base price and the total bases of individual producers were not to exceed that amount at any time during the year. The apportioning of sales among producers was also accomplished by transferring producers between dealers so that an equal percentage of each patron's base would be sold as fluid milk and cream. The total amount of base milk on the market was adjusted from time to time to changes in the sale of fluid milk and cream. At the time of the public hearing held in July 1933 the amount of daily base milk in the market was 194,000 pounds.

The same bases as were in effect at that time were provided for in the Federal License made effective March 16, 1934. Provision was also made to establish equitable bases for the producers who had no bases at that time. As far as was practicable the market administrator was to adjust total bases in the market to equal total Class I and Class II milk. Provision was also made for adjustment of individual producer's bases if for three consecutive months his average delivery of milk were less than 75 percent of his base to equal such average monthly delivery. This last provision was later revised on July 1, 1935, to provide that if for any four consecutive delivery periods his average delivery of milk were less than 80 percent of his base an adjustment would be made in such producer's base so that his new base would equal such average delivery.

There is no provision in the proposed marketing agreement and proposed order for a specific adjustment of a producer's base except as all producers' bases are adjusted each calendar quarter to equal 115 percent of the average Class I and Class II milk per day received

Table 33: Milk markets operating with base-surplus plans 1/ as a part of the market structure, and date of institution of base-surplus plan on these markets, as of February 1, 1935.

Market	State	Effective date of license	Year base-surplus plan was established (approximate)
Philadelphia <u>2/</u>	Pennsylvania	Aug. 25, 1933	1919
Chicago	Illinois	Feb. 5, 1934	1929
Des Moines	Iowa	Feb. 14, 1934	1930 <u>3/</u>
Omaha-Council Bluffs	Nebraska-Iowa	Feb. 23, 1934	Feb. 23, 1934 <u>4/</u>
Evansville	Indiana	Feb. 26, 1934	1932
St. Louis	Missouri	Mar. 2, 1934	1930 <u>5/</u>
Boston	Massachusetts	Mar. 16, 1934	1930 <u>6/</u>
Lincoln	Nebraska	Mar. 17, 1934	1934
Wichita	Kansas	Mar. 17, 1934	Mar. 17, 1934 <u>7/</u>
Greater Kansas City	Missouri-Kansas	Mar. 17, 1934	1931
Detroit	Michigan	April 1, 1934	1923 <u>8/</u>
Newport	Rhode Island	Apr. 1, 1934	1923
Providence	" "	Apr. 1, 1934	1931
New Bedford	Massachusetts	" " "	1931
Fall River	"	" " "	1931
Richmond	Virginia	May 1, 1934	1930
Leavenworth	Kansas	May 16, 1934	May 16, 1934
Quad Cities	Iowa-Illinois	June 1, 1934	July 1933 <u>9/</u>
Louisville	Kentucky	" " "	1929 <u>10/</u>
Los Angeles	California	" " "	Feb. 1926 <u>11/</u>
Ann Arbor	Michigan	July 1, 1934	1923 <u>12/</u>
Alameda County	California	" " "	1930
Battle Creek	Michigan	" " "	Sept. 1933
Bay City	"	" " "	May 3, 1934
Flint	"	" " "	" " 1934
Grand Rapids	"	" " "	1923
Kalamazoo	"	" " "	1933
Lansing	"	" " "	1930 <u>13/</u>
Muskegon	"	" " "	1930
Port Huron	"	" " "	July 1, 1934 <u>14/</u>
Saginaw	"	" " "	1927
Baltimore	Maryland	Aug. 1, 1934	1918
Savannah	Georgia	Aug. 16, 1934	1929
Tulsa	Oklahoma	Aug. 21, 1934	Nov. 11, 1934 <u>15/</u>
San Francisco	California	Oct. 2, 1934	1930
Southern Illinois	Illinois	Nov. 1, 1934	1932
Atlanta	Georgia	Dec. 1, 1934	1932 <u>16/</u>
San Diego	California	Feb. 1, 1935	1932

Compiled in most cases from transcripts of hearings for proposed marketing agreements for milk.

1/ Sponsored in every case by a cooperative association of producers in the market.

Continued.

- 2/ Operating under the "old" license policy.
- 3/ Base-surplus plan dropped from license December 5, 1934.
- 4/ Apparently no base-surplus plan prior to the license.
- 5/ Base-surplus plan discontinued under license as of November 16, 1934.
- 6/ There had been in effect for several years another plan prior to the present one.
- 7/ No base-surplus plan prior to license.
- 8/ Horner, J. L., Michigan State College, Special Bulletin No. 170, page 31.
- 9/ Abandoned in March 1934. Added to license September 1, 1934.
- 10/ Introduced about 1929 but discontinued in fall of 1930. Reestablished in later years.
- 11/ Source: U.S.D.A. Technical Bulletin No. 179, Cooperative Marketing of Fluid Milk, by Hutzler Metzger.
- 12/ Abandoned after several years. Reestablished in 1930.
- 13/ Operated only temporarily. Effected again in June 1934.
- 14/ The base-surplus plan had been used over a small part of the market for several years previously.
- 15/ Established as a license feature November 5, 1934.
- 16/ Two early attempts failed. Reestablished in February 1934.

Table 34: Number of milk markets wherein base-surplus plan was instituted during the year, and cumulative total, 1918-1934, inclusive.

Year	Number of markets where base-surplus plan was started during the year.	Cumulative Total
1918	1	1
1919	1	2
1920		2
1921		2
1922		2
1923	3	5
1924		5
1925		5
1926	1	6
1927	1	7
1928		7
1929	3	10
1930	8	18
1931	2	20
1932	4	24
1933	3	27
1934	7	34

Table 34. The data are incomplete in that no information is available covering all milk markets. The data given in the above table are taken from transcripts of hearings on milk licenses, and four markets operating under a base-surplus plan were excluded due to lack of information with respect to the date the plan was instituted.

by handlers from producers during the fourth calendar quarter of the next preceding calendar year.

Thus the base rating plan provided adjusts all bases in the market to an amount of milk which would adequately care for the fluid milk and cream sales in the market even during the short seasons. There is nothing to prevent a producer from making his deliveries of milk at any season and in any amount that he wishes. The plan, however, does take cognizance of the economic fact that milk produced in a constant amount from season to season is in greater demand by handlers of fluid milk and cream than milk produced with a high seasonality.

The actual computations by which the prices to be paid producers for their base milk are to be calculated as outlined in the proposed marketing agreement and proposed order in the following manner:

Section 2 of Article VII provides for the computing of the payments per hundredweight, uniform, with stated adjustments, to all producers delivering to handlers, which will distribute the total value of milk received from producers by all handlers. The market administrator is required to notify all handlers and publish the uniform prices in effect for any delivery period on or before the 7th day after the end of such delivery period. The market administrator is thus allowed two days from the time of receiving reports of handlers for the necessary computations. The announcement of the price on this date allows a period of three days after receiving notice of the price before payment is required to be made to producers as a reasonable time for the clerical work necessary on the part of handlers in preparing checks and statements for distribution to producers.

Having determined the total amount of the pool, according to the method described previously, it is necessary next to add to the amount of the pool the differentials which are to be subtracted from the uniform prices. These differentials are provided for in Section 4 of Article VIII and are for the purpose of compensating producers in accordance with the different points at which their deliveries of milk are made.

Since country stations are located at a distance from Kansas City, varying from 35 to 67 miles, it is necessary also to adjust the payments to producers of each country station by the amount of a fair trucking charge from that point to the Kansas City market. The differentials for country station and transportation provided in the proposed marketing agreement and proposed order are as follows: for country stations located between 30 and 45 miles from the City Hall in Kansas City, 17 cents per hundredweight, and for each additional 10 miles or part thereof, an additional 1-1/2 cents per hundredweight, for that quantity of milk which corresponds to the producer's share in the Class I and Class II sales of the market in his base. The allowance is made on only such amount of milk rather than on all base milk for the reason that part of the base milk will be used for Class III for which no such allowance is proposed. As has been shown in discussion of the pool computations, however, the blended price reflects the pooling of all such charges and the economies effected in utilization of the milk requiring the smallest transportation.

It is also necessary to subtract the total amount to be paid to producers for that part of their production which is in excess of their bases in order to determine the total value of base milk.

Such excess milk is to be paid for at the Class III price so that the total value of such milk will be merely the amount of such milk multiplied by the Class III price.

There is now left in the pool the amount of money to be divided over all milk which was delivered by producers not in excess of bases. This sum is divided by the amount of delivered bases, the result being the blended price per hundredweight for base milk. This blended price is to be paid to all producers for milk of the same quality and grade subject only to the country station and transportation differential described above.

C. Calculation of a sample pool.

In order to present more clearly the most important calculations involved in the computation of the total value of all milk and the blended price to be paid producers, an attempt has been made to describe such calculations in this section by means of an example.

For purposes of exposition it is assumed that there are only three handlers in the market: Handler A who receives all his milk from producers at his city plant; handler B who receives some milk at his city plant located 35 miles from the City Hall and the rest of his milk at his country plant; and handler C who receives all his milk at his country station located 60 miles from the City Hall.

Each handler reports to the administrator his receipts of milk from producers and his sales from which the administrator determines the classification as shown in Table 35.

The prices assumed for milk used in each class are presented in Table 36. With these prices and classification the market administrator determines for each handler the total value of his milk and also the total value of all milk in the market. These values are presented in Table 36. The total amount of \$118,679, the total value of all milk in all classes, is to be distributed among all producers and nothing in the calculations from this point will affect this total payment to be made by handlers to all producers.

The next step is to determine the total value of the base milk in the market. All excess milk is to be paid for at the Class III price so that the total value of such milk would be the total deliveries of excess milk times the Class III price, $4000.00 \times \$1.25 = \$5,000$. This amount is subtracted from the total value of all milk leaving a value of base milk equal to \$113,679 as shown in Table 36.

Table 35. Prices per hundredweight assumed in sample pool.

Class	FOB City	FOB Country Station 30 - 45 miles	FOB Country Station 55 - 65 miles
	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
Class I	2.00	1.83	1.80
Class II	1.50	1.33	1.30
Class III	1.25	1.25	1.25

Table 36. Report of handlers in sample pool

	Class I	Class II	Class III	Base		Excess	
	Pounds	Pounds	Pounds	At Country Station Pounds	At City Plant Pounds	At Country Station Pounds	At City Plant Pounds
Handler A	3,500,000	1,000,000	650,000		5,000,000		150,000
Handler B	400,000	300,000	100,000	400,000	300,000	80,000	20,000
Handler C	300,000	350,000	200,000	700,000		150,000	
Total	4,200,000	1,650,000	950,000	1,100,000	5,300,000	230,000	170,000

Table 36 cont'd. Total Value of Milk, by classes, in sample pool

	Class I	Class II	Class III	Total
	Dollars	Dollars	Dollars	Dollars
Handler A	70,000	15,000	8,125	93,125
Handler B				
(a) Received at City Plant	6,400			
(b) Received at Country Station	1,464	3,990	1,250	13,104
Handler C				
Received at Country Station	5,400	4,550	2,500	12,450
Total Value	83,264	23,540	11,875	118,679

In order that there shall be a proper relation between the value of base milk delivered f.o.b. the city and the base milk delivered f.o.b. the country stations beyond 30 miles from the City Hall, it is proposed that producers delivering their milk to country stations receive for that percentage of their base milk which is in excess of the percentage total Class I and Class II milk in the market is of total delivered bases and for the rest of their base milk they shall receive \$.17 plus \$.01-1/2 for each additional 10 miles beyond 45 miles less than the price received for base milk delivered direct to the city. In other words it is the same as providing that there shall be a difference in the prices for each delivery period equal to that percentage of \$.17 plus \$.01-1/2 for each additional 10 miles beyond 45 miles that is equal to the percentage the Class I and Class II milk in the market is of the total delivered base milk in the market each delivery period.

In this example the Class I and Class II milk in the market is .9141 percent of the total delivered base milk (5,850,000 + 6,400,000) so that the differential at the country plant of handler B is \$.1554 and at the plant of handler C \$.1828.

In order that there shall be these differentials in the base price, the administrator adds to the total value of base milk the total value of these differentials which in this example is equal to:

$$\begin{array}{rcl} 400,000 \times .001554 & == & \$621.60 \\ 700,000 \times .001828 & == & 1,279.60 \\ & & \hline & & \$1,901.20 \end{array}$$

The mathematical proof of this calculation is as follows:

Let x = the base price per cwt., f.o.b. the city
then $x - \$1.554$ = " " " " " " " country plant of B
and $x - \$1.828$ = " " " " " " " " " " " C
and 5,300,000 = " deliveries of base milk at the city
400,000 = " " " " " " " plant of B
700,000 = " " " " " " " " " C
and 113,679 = total value of the base milk

so that:

$$\begin{array}{rcl} 53,000x + 4000(x - \$1.554) + 7000(x - \$1.828) & = & \$113,679 \\ 64,000x & = & \$113,679.00 + \$1901.20 \\ x & = & 1.8059 \\ x - .1554 & = & 1.6505 \\ x - .1828 & = & 1.6231 \end{array}$$

The administrator then notifies handler A that the total value of his milk for the delivery period was \$93,125 and that he is to pay direct to his producers the following:

$$\begin{array}{rcl} 50,000 @ \$1.8059 & = & \$90,295 \\ 1,500 @ 1.25 & = & 1,875 \\ \text{Total} & = & \$92,170 \end{array}$$

and because the value of the milk of his producers is not as great as the

value of the milk, as used by him, he is to pay the difference of \$93,125-\$92,170 or \$955 to producers through the administrator.

He notifies handler B that the total value of his milk was \$13,104 and that he should pay direct to his producers:

3,000	@	\$1.8059	=	\$ 5417.70
4,000	@	1.6505	=	6602.00
1,000	@	1.25	=	<u>1250.00</u>
Total			=	\$13269.70

The total value of the milk of the producers of handler B is more than value of such milk as used by handler B. In this case so that the producers shall receive the full value of their milk such producers receive through the administrator and their handler the difference of \$13,269.70 - \$13,104 or \$165.70.

The administrator notifies handler C that the total value of his milk was \$12,450 and that he is to pay his producers as follows:

7,000	@	\$1.6231	=	\$11,361.70
1,500	@	1.25	=	<u>1,875.00</u>
Total			=	\$13,236.70

As in the case of handler B the value of the milk of producers of handler C is greater than the value of milk as used by handler C. Hence he receives the difference of \$13,236.70 - \$12,450 or \$786.70 through the administrator to pay producers.

Thus when all these transactions are cleared each handler has paid the same price for his milk and each producer has received an equitable apportionment of the total value of all milk. The administrator has received through the pool \$955 and has paid out \$952.40 (the remaining \$2.60 is due to the estimating of the final decimal points.)

Part IX

Other Provisions of the Proposed Marketing Agreement and Proposed Order for the Kansas City, Missouri, Marketing Area.

The remaining provisions of the proposed marketing agreement and proposed order are necessary for defining more explicitly and making effective the classification and price provisions previously discussed.

A. The Kansas City, Missouri, Marketing Area

As defined in the proposed marketing agreement, and proposed order, the marketing area includes the territory within the corporate limits of Kansas City, Missouri.

This area is intended to include all the areas which are affected by the same supply and demand conditions and, from this point of view, constitutes one market.

The population of nearly 400,000 people is largely industrial, engaged mainly in packing houses, railroad shops, and flour mills. The prosperity of the area depends to a very large extent on the income of agriculture in the surrounding area.

The sanitation requirements as established by the Kansas City Board of Health in Ordinance 41,500, approved December 20, 1920, regulate the production and handling of milk for sale in Kansas City, Missouri. Thus all the milk sold in the marketing area as fluid milk and cream must meet the same health requirements while those areas outside the marketing area either have no sanitation requirements or do not enforce rigidly the ones that they do have. All the producers for this market must be registered and inspected regularly by the health authorities.

The marketing area defined as it is includes all the area in which operate all those handlers who are in competition with each other for the sale of milk from producers as defined in the proposed marketing agreement, and proposed order. The area defined represents the market where the factors of supply and demand determining the price of milk to producers operate. All the milk entering the marketing area is of such similar quality that all enters into competition for the market.

B. Reports of handlers

Article V of the proposed marketing agreement and proposed order sets forth three types of reports which handlers are required to submit and provides for the verification of these reports. The necessity for all these reports and for their verification becomes apparent with the realization of the nature of a milk market and practical operating problems which arise in making effective the class price in the payments to all producers of uniform prices which reflect the utilization of milk by all handlers.

Section I requires handlers to submit reports on or before the fifth day after the end of each delivery period, showing, in such detail and form as the market administrator discovers best fits the particular conditions, the information as to all milk or cream received by handlers and the utilization of such milk. With this information before him, the market administrator is able to determine for each handler the classification of the milk, the total payment to be made to producers therefor, and, after combining the total payments of all handlers, the uniform price which will distribute such total amount of money to all producers who delivered the milk to all handlers.

Section 2 provides for other reports with respect to producers delivering milk to a handler. These reports enable the market administrator to secure needed information with respect to producers after a handler has newly become a party to the agreement or subject to the order, or to request information not already in his hands, which is needed for full knowledge in order to effectuate and to determine the effects of the order in relation to the policy of the Act. The second report provided for under section 2 requires that each handler report to the market administrator upon first receiving milk from any producer who has not previously shipped milk to that handler, in order that the market administrator may keep his records up to date with respect to the producers delivering to each handler.

Section 3 provides for the regular reporting by handlers of their payments to producers for each delivery period in the form of a copy of the handler's producer payroll. Such a report expedites the routine checking of compliance with the marketing agreement and order and provides in an economical way the information necessary for the market administrator to maintain adequate producer records.

Section 4 provides that each handler shall permit the market administrator to verify the information contained in all reports; the importance of routine verification of all reports is readily understandable in view of the intricate and detailed transactions which are inherent in the milk business. Where errors both wilful and accidental may so readily creep in and affect the returns to producers, successful operation of a marketing agreement and order will depend to a large extent upon the extent to which the market administrator assures himself of the correctness of the figures supplied him in the reports and of the correctness of the sampling, weighing and testing for butterfat of the milk which is delivered by producers. Such routine verification is thus extremely necessary for the effectuation of the provisions of the marketing agreement and order.

C. Payments to Producers

Article VIII of the proposed marketing agreement and proposed order provides that the minimum class prices shall be paid by handlers, for each delivery period not later than the 10th day following the delivery period, in the form of uniform prices to all producers, subject to specified adjustments such as are authorized in the Agricultural Adjustment Act. The adjustment which most affects the returns of any

producer is that adjustment depending upon deliveries of milk of a producer during a representative period of time, which gives rise to the base rating plan already discussed.

Paragraph 1 provides that each producer shall be paid for milk delivered not in excess of his base, the blended price subject to the country station and transportation differentials described above and a butterfat differential. This butterfat differential is provided for in section 3 of the article and represents a compensation as between producers who deliver milk of identical characteristics except for a difference in butterfat content. This differential amounts to \$.04 per hundredweight for each one-tenth of one percent variation from 3.8 percent butterfat content.

Paragraph 2 provides that producers shall be paid for milk in excess of base, at the Class III price.

Paragraph 3 provides for the completion of the payment by each handler of the full classification value, but no more, of the milk received by a handler as the handler made use of it by paying to or receiving from the market administrator the difference between his payments direct to producers and the classification value of his milk. Thus when all the payments set forth in article VIII have been made, each handler has paid the minimum class prices uniformly with all other handlers, and producers have received uniform prices for milk delivered subject to the specified adjustments which translate a mathematically uniform price into practically uniform returns in accordance with the situation of the producer.

There is a contingency, however, that not all of the handlers will make the portion of the payment to producers through the market administrator which is prescribed in section 1 of article VIII. To cover such a contingency the market administrator is authorized, article VII, Section 2, paragraph 5, to withhold from the rate per hundredweight an amount between 4 and 5 cents. This deduction from the blended price is not a deduction but a deferring of the full payment until the money is sure to be in hand.

Paragraph 6 of the same section and article is a companion to paragraph 5 and to section 3 in providing for the distribution of all money in hand for producers up to the next preceding delivery period but one. By this means all of the collections for which the 4 - 5 cents was set aside are distributed each delivery period (one delivery period intervening) as the collections are made. It is more important to consider these three provisions in the light of the practical operation of the plan. Inevitably, some reports will be late, some payments will fail to reach the market administrator on time, and errors will be made in both reports and payments. These three provisions give the market administrator a method by which to meet the practical problems which will arise in connection with the pool and still preserve practical equity in the distribution of money as between producers.

The blended price announced by the market administrator, therefore, represents the pooled utilization of milk for the delivery period less 4 - 5 cents, plus whatever hitherto uncollected money has come into the market administrator's hands for previous delivery periods.

D. Producer-handlers

The extent to which the handling of milk of producer handlers is regulated is presented in sections 1 and 2 of Article VI and section 3 of article VII of the proposed marketing agreement and proposed order. The mechanics of the calculations have been described in the previous sections. In effect all bottled milk sold by such handlers is to be excluded from regulation. All bulk milk of such handlers for whom no base is established, bought by other handlers is to be pooled at the difference between the Class III, and the Class I and Class II price according to the use made of such milk by such purchasing handler. If a producer-handler purchased milk from other producers, then he is to be allowed to have deducted 95 percent of his production from his Class I and Class II milk and the remaining 5 percent from his Class III milk.

For producer-handlers who have established regular deliveries of bulk milk to other handlers and for those who desire to do so, there is a provision allowing them to have a base established for such deliveries. At the request of such handler and for whom there is no record upon which to establish a base as for other producers, then the base of such producer-handler for each delivery period, shall be calculated as follows: divide the total amount of milk delivered by such producer in the 6 delivery periods preceding the request of such producer for a base by the number of days in those 6 delivery periods and multiply by the number of days upon which he delivered milk during each delivery period for a full calendar quarter subsequent to the producer-handler's request. After the first calendar month, such producer-handler's base is to be computed similar to that of any other producer.

The reasons for regulating the milk of such handlers in a different way than the milk of other handlers are many. Chief among them are the following:

1. Market acceptance of producer-handlers.
2. Difficulty of recognizing in any other way the particular advantages that should accrue to a producer-handler due to his
 - a. nearness to market,
 - b. uniformity of production,
 - c. adjustment of production to the changes in demand.

In the Kansas City market there are some additional considerations due to the rigid health requirements imposed upon the production and distribution of raw milk.

1. Producers of raw milk must maintain extremely sanitary premises.

2. The bacterial content must be below 10,000 per c.c.
3. The milk must be bottled on the farm.
4. Employees must be examined once a month by competent physicians.

All of these requirements materially increase the cost of production as well as distribution of raw milk. Due to these requirements, there has developed a distinct preference for either raw or pasteurized milk on this market so that producers of raw milk and producers of pasteurized milk are serving peculiarly distinct markets. This in turn has made it necessary for producer-handlers to create a clearing house among themselves for the purpose of meeting the fluctuation in market demand and makes it impossible for them to impose the burden of the fluctuation either upon other producers or other handlers. But the way is left open for such producers to establish themselves as regular producers of bulk milk for the market and to be paid similar to any other producer in the market.

The proposed plan thus seems to give adequate consideration to the producer-handlers who are peculiarly circumstanced and who serve markedly different type of markets than the regular bulk producers.

E. Inter-handler sales.

Section 2 of article III provides that milk sold by a handler to another handler shall be presumed to be Class I milk provided that, if such selling handler submits proof satisfactory to the market administrator that such milk was actually sold or used by the purchasing handler other than as Class I milk, then, and in that event, such milk shall be classified in accordance with its actual use.

One of the fundamental objectives of the proposed marketing agreement and proposed order is that all handlers shall pay uniform prices for milk according to the utilization of such milk. The routes of milk from producers to consumers are so intricate and varied, and the milk passes through several handlers, that as a practical necessity the milk must be classified at some focal point in the route. In this way only can the market administrator be assured that all handlers are paying for milk according to the use which is made of it. Most of the inter-handler sales are fluid milk sales so that it is reasonable to presume that all sales unless proven otherwise are Class I. Provision is made, however, that if such milk is used as Class II or Class III then the selling handler can, upon submitting proof satisfactory to the administrator, pay the Class II or Class III price for such milk.

F. Definitions

1. "Person" means any individual, partnership, corporation, association, or any other business unit. In the milk industry, practically all types of business organization are to be found. Hence, in order that

all handlers subject to regulation in a milk market be regulated, it is necessary that all possible types of business organization be specified and the proposed marketing agreement and proposed order be made applicable thereto. If this were not done, some persons would be exempt from the provisions of the proposed marketing agreement and proposed order, even though the character of their business were such that they were subject to regulation. This would operate to cause the regulatory aspects of the proposed marketing agreement and proposed order to be discriminatory between different firms, and it is to obviate this inequitable result that "person" is so defined as to cover all types of business organization.

2. "Producer" means any person, irrespective of whether such person is also a handler, who produces milk in conformity with the health requirements applicable for milk to be sold for consumption as milk in the Kansas City Marketing Area. Milk which does not meet these requirements cannot legally be sold as milk in the Kansas City Marketing Area, hence the handlers of such milk should not be subject to any proposed marketing agreement and proposed order relating to such milk. But all milk which meets the health requirements is in actual or potential competition with all other such milk, and handlers of such milk must be subject to any proposed marketing agreement and proposed order for such to be effective in regulating the handling of such milk.

3. "Handler" means any person, irrespective of whether such person is a producer or an association of producers, wherever located or operating, who (a) engages in such handling of milk, which is sold as milk or cream in the marketing area, as is in the current of interstate or foreign commerce, or which directly burdens, obstructs, or affects interstate or foreign commerce in milk and its products.

One of the major objectives of this proposed marketing agreement and proposed order is to place all handlers on a comparable basis with respect to the purchase price they are required to pay for milk sold in the several use classes. In order to do this, all competitive factors in the market must be controlled and directed so that the market operates efficiently and losses engendered by unrestrained, unfair competition are eliminated. In order that this major purpose may be accomplished all persons involved in the handling of milk and its products in interstate commerce, or so as to burden, obstruct, or affect interstate commerce, must be subject to the proposed marketing agreement and proposed order. All types of business setups and organizations, both physical and legal, are found. Hence, the definition of a handler must be broad enough to include all those persons who are in competition with each other so that no provision of the proposed marketing agreement and proposed order be discriminating in effect with respect to different firms or persons.

G. Market Administrator and provisions relating thereto.

1. Selection, removal and bond. In order that the Secretary can be assured that the administration of the proposed marketing agreement and proposed order is being carried out without any bias in favor of or against any group in the Kansas City Marketing Area, it is necessary that

he appoint the Market Administrator. This procedure has been followed in all Federal milk licenses, due to the fact that it has proven more feasible than other types of administrative organization. The person selected needs to be one of wide experience and one with complete understanding of the proposed marketing agreement and proposed order. In order further to insure unbiased administration of the proposed marketing agreement and proposed order, it is necessary that the market administrator, selected by the secretary, be subject to removal by the Secretary and only by the Secretary. For further assurance to all concerned of the faithful and honest performance by the Market Administrator of his duties, the market administrator is required to execute and deliver to the Secretary a bond in such amount as the Secretary may determine, with surety thereon satisfactory to the Secretary.

2. Compensation. The Secretary, who selects the Market Administrator, should also be the one to determine a reasonable compensation for the market administrator he selects. The market administrator being necessary for the proper administration of the proposed marketing agreement and proposed order, his salary is considered an expense of administration.

3. Duties. In order that there shall be proper administration of the proposed marketing agreement and proposed order, the market administrator must:

a. Keep such books and records as will clearly reflect the financial transactions provided for in the proposed marketing agreement and proposed order.

In order for the Secretary to be assured, and to assure producers and handlers of proper administration of the proposed marketing agreement and proposed order, the books and records of the market administrator must be subject to his examination at any and all times. Only by being so assured can the Secretary know definitely that the proposed marketing agreement and proposed order are effectuating the policy of Congress as stated in the Agricultural Adjustment Act.

b. In order for the Secretary to be informed, furnish such information and verified reports as the Secretary may request.

c. In order to assure that his duties, for which the Secretary is responsible, are being properly carried out by his employees, obtain a bond for each employee who handles funds entrusted to the market administrator under the provisions of the proposed marketing agreement and proposed order. Most of the money handled in the Administrator's office belongs to handlers or producers, and the bond would cover possible losses to them. This insurance being necessary to the proper administration of the proposed marketing agreement and proposed order, the expense of such bond should be a part of the expense of administration.

d. Publicly disclose, except as otherwise directed by the Secretary, the name of any person who has not:

(1) Furnished security pursuant to article XI of the proposed marketing agreement and proposed order. A producer, if his payments are to be insured by the provisions of article XI of the proposed marketing agreement and proposed order, is entitled to know and must know if the handler of his milk has not met the terms of said article. If this information is not disclosed to the producer, he might assume that the handler of his milk has filed security and that his payments are being insured and it is the administrator's duty to clarify the situation. In this way only can the administrator fulfill the responsibility he has of assuring producers that the payments for their milk are insured. It is equitable also to disclose to handlers the names of those handlers who are not supplying their producers the same protection as those handlers who have filed security.

(2) Made reports pursuant to article V of the proposed marketing agreement and proposed order. These reports are the only way in which the administrator can determine in a reasonable length of time sales made by each handler in each class, etc. These reports are necessary in order that prices to producers be computed by the market administrator and the purpose of the proposed marketing agreement and proposed order be effectuated. If the handler pays his producers without filing these reports, other handlers and also the producers should be informed that that handler had not filed reports and that the administrator could not determine if the handler had paid the correct price for his milk. If the producers are not so informed, they might assume that they had been paid the correct price. The administrator must make it known that he had not verified the prices paid and, therefore, was not responsible for its correctness.

(3) Made payments pursuant to article VIII of the proposed marketing agreement and proposed order. The market administrator obtains information to compute the price that shall be paid by each handler and also obtains information as to what price was paid. With no notice to the contrary, a producer might assume that the price he received was the one to which he was entitled, when, in fact, it might be different from what the market administrator had computed as being correct. Because the producer might make such an incorrect assumption, the market administrator must notify such producers that the prices paid by the handler were not those computed by the market administrator. All handlers will be in the same competitive position only if they pay the price as computed by the administrator. The other handlers in the market in order to be on equal competitive terms should know the names of those competitors who have not paid the same price for their milk (subject only to adjustments) as they have.

H. Deductions for marketing services (Article IX of the proposed marketing agreement and proposed order).

The Agricultural Adjustment Act, as amended, states that the Secretary of Agriculture may provide for marketing services as follows, (Section 8c (5) (F)):

"Providing (i) except as to producers for whom such services are being rendered by a cooperative marketing association qualified as provided in paragraph (F) of this subsection (5)

for market information to producers and in the verification of weights, sampling and testing of milk purchased from producers and for making appropriate deductions therefor from payments to producers"

The types of service to be provided are specifically set forth, namely, checking of weights, sampling and tests of milk, and market information. The former has a direct bearing upon the size of payments received by producers, and, in turn, the stability of the market structure; the latter provides for the dissemination of such information to producers as will aid them in a better marketing of their products.

Article IX of the proposed marketing agreement and proposed order provides for market service to producers. In section (1) provision is made for a deduction of three (3) cents per hundredweight from the payments made to producers, such monies to be expended by the market administrator for market information and the verification of weights, sampling and tests of milk. Similarly, section (2) provides that if a cooperative marketing association is found to be qualified under the requirements of paragraph F, section 8c (5) of the Act, and is properly rendering the services to producers enumerated in article IX, section (1) of the proposed marketing agreement and proposed order, then the monies deducted by handlers from the members of such associations shall be paid over to that association.

It is declared to be the policy of Congress, as stated in the Agricultural Adjustment Act, to recognize and encourage producer cooperatives. There is no restriction in the proposed marketing agreement and proposed order which would operate to the disadvantage of, or tend to supplant, their work. Rather, such services are encouraged by reason of a recognition that the cooperatives, due to a close relationship with their members, probably are in a better position to render these services to their members than is the market administrator.

Experiences of the cooperatives have demonstrated that the rendering of marketing services to their members is a desirable feature in the proper functioning of the market mechanism. Producers generally do not have available facilities to determine accurately the weight of their milk. Neither are they in a position to test precisely its fat content. Yet, without verification of the weights and tests as determined by the handlers, producers often question the accuracy of the prices paid them. Marketing services in the nature of check weighing and testing are thus rendered because the producers themselves desire that service.

Undoubtedly, spot checking of the purchases of milk of individual handlers by the market administrator would suffice in verifying weights and tests, and, in turn, the accuracy of price computations. However, the producers, as stated heretofore, desire more than this. Their primary concern is that of ascertaining, not the general accuracy of the weights and tests determined by handlers to whom they deliver milk, but of the exact weights and tests of their own deliveries.

Table 37. Expenditures from the marketing service fund
under License No. 40, Kansas City (Missouri)
Sales Area, July 1, 1935 - December 31, 1935.

Expense classification	: Amount
	: <u>Dollars</u>
Salaries	: 717.82
Testing and weighing	: 379.41
Arbitration expense	: 240.79
Other expense	: 90.02
Total expenditures for non- member producers	: 1,428.04
Paid to producers' associations	: 9,674.99
Total	: 11,103.03
Average cost of non-member service per hundredweight of milk	: .02525

Compiled from reports of the Market Administrator, License
No. 40.

The presentation of marketing information to producers has become a necessary adjunct to an intricate marketing process. With this information producers are better enabled to adjust their production and marketing to current market conditions. The United States Department of Agriculture regularly furnishes information to producers in the form of crop and livestock reports, outlook statements, etc. This service is maintained only because producers recognize it as indispensable.

The dissemination of current market information, such as price aspects of the market, local supply and demand conditions, etc., by the market administrator serves an identical purpose.

A summary of expenditures from the marketing service fund under License No. 40, for the period July 1, 1935 to December 31, 1935 is shown in Table 35. These figures indicate that a three (3) cent deduction is reasonable and adequate to cover the costs of those services which assure accurate payments to producers at the established prices, thus tending to aid in effectuating the policy of Congress as stated in the Agricultural Adjustment Act.

I. Expenses of administration (Article X of the proposed marketing agreement and proposed order).

The market administrator must necessarily incur many expenses in his operations: he must maintain a personnel sufficient to (a) compute periodically the prices to be paid by handlers to producers, and determine the adjustments from those prices, (b) record and audit the sales reports of handlers, and (c) provide for contact work with handlers and other parties in the market.

Table 36 shows the cost incurred in the administration of License No. 40 during the period July 1, 1935 to December 31, 1935. The total cost of administration amounted to \$.01124 per hundredweight of milk pooled, whereas only \$.01 per hundredweight was provided in the Federal License.

Article X of the proposed marketing agreement and proposed order for the Kansas City (Missouri) Marketing Area, provides that each handler pay to the market administrator a sum not exceeding two (2) cents per hundredweight, the monies so obtained being used to cover the cost of administration of the proposed marketing agreement and proposed order. The exact amount per hundredweight is to be determined by the market administrator. In view of the experience gained in the administration of License No. 40, it appears that the maximum charge for meeting costs of administration, two (2) cents per hundredweight as specified in article X of the proposed marketing agreement is reasonable.

Table 38. Expenditures from the administrative fund
under License No. 40, Kansas City (Missouri)
Sales Area, July 1, 1935-December 31, 1935.

Expense classification	:	Amount
		<u>Dollars</u>
Salaries	:	3,899.99
Legal expense	:	576.00
Rent	:	300.00
Travel expense	:	84.13
General expense	:	444.69
Total	:	5,304.81
	:	<u> </u>

Average cost per hundredweight of milk: .01124

Compiled from reports of the Market Administrator, License
No. 40.

Appendix A

THE PRICE STRUCTURE FOR MILK

Technical Paper No. 1, Dairy Section,
Agricultural Adjustment Administration,
United States Department of Agriculture.

THE PRICE STRUCTURE FOR MILK

by

E. W. Gaumnitz 1/

and

O. M. Reed 2/

Introduction

One of the most important and perplexing problems encountered in milk marketing is that pertaining to the classification of milk. This problem is merely one of many, although fundamental and probably the most important, that may and perhaps must be approached through a study of the price structure for milk.

This paper was written for use in connection with marketing agreements and orders for milk. However, numerous questions have arisen pertaining to the classification of milk, the price structure, and related problems, and it is for these reasons that this paper is made available at this time.

This analysis of the price structure has been developed under assumptions of competitive conditions. Numerous details have been omitted in the interest of brevity and in order that the discussion be suitable for general use. The analysis will be expanded as rapidly as possible, and the later phases of the work are to deal primarily with the price structure when the assumptions upon which this paper is based are varied.

The authors have received aid from several persons in the development of this paper. Dr. Warren C. Waite helped draft the paper in all but the latest stages of its development, and Dr. Harold B. Rowe contributed many valuable suggestions relative to the technique of the analysis. Others have made fruitful suggestions and have aided materially in editing the paper.

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Part I

THE PRICE STRUCTURE FOR MILK FOR THE COUNTRY AS A WHOLE

A complete analysis of the price structure for milk for the country as a whole would fill a rather sizable volume. However, for the purposes of this paper, it is unnecessary to devote a great deal of time and space to the development of such an analysis. All that is intended in Part I is to develop a rather general treatment of the price structure for milk for the country as a whole, in order that the analysis of the price structure for milk within a milk shed may be approached more satisfactorily.

An explanation of the price structure for dairy products for the country as a whole involves consideration of (1) the conditions affecting the demand for milk, and (2) the supply characteristics of milk with respect to the localization of particular phases of the industry and the interchangeability of milk between different dairy products. Likewise, an explanation of the price structure for milk within a particular area or a particular milk shed involves consideration of (1) the nature of the demand for the different products derived from milk, and (2) the conditions affecting the supply of milk.

A. The nature of the demand for milk. It is well recognized that the demand for any commodity is a composite of the demands of the different groups of people who are ready to purchase different quantities of it at different prices. Similarly, the demand for a product such as milk, which is used in the production of a number of different products, 1/ is

1/ In 1932 the total volume of milk used in the manufacture of dairy products and used by the non-farm population as fluid milk and cream was distributed among the various uses as follows:

Product	Percent of total volume used
Butter - creamery and whey	45.6 <u>a/</u>
Other manufactured products	13.2 <u>a/</u>
Milk used by non-farm population as fluid milk and cream	41.2 <u>b/</u>
Total	100.0

a/ Compiled from estimates of the production of manufactured dairy products, Bureau of Agricultural Economics, U. S. Department of Agriculture.

b/ Compiled from Estimates of Consumption of Milk and Cream in Cities and Villages, Bureau of Agricultural Economics, U. S. Department of Agriculture.

the aggregate or composite demand for milk in all uses. Thus, although the different forms or products in which milk is used are competitive in the sense that each use competes with all other uses for a portion of the total supply of milk, and the derived demands are rival or competitive, in the aggregate they comprise the total demand for milk. The nature of the demand for fluid milk is discussed at length in Part III of this paper.

B. The supply characteristics of milk.

1. Localization of the industry. Although milk production is an important agricultural enterprise in practically every State in the United States, it nevertheless varies markedly between areas as to relative importance and is highly concentrated in certain areas. An important factor in this connection is the fact that the transportation system has developed so that certain areas possess a comparative advantage in the production of milk for use in the production of dairy products that are readily storable and transportable, and others have a comparative advantage in the production of milk for fluid consumption. Thus, the States of Iowa, Minnesota, Nebraska and Wisconsin produced 44.8 percent of the total volume of creamery butter produced in the United States in 1932 and 1933. Wisconsin and New York produced 64.8 percent and 62.1 percent of the total volume of cheese produced in the United States in 1932 and 1933, respectively. Of the total United States production of evaporated milk in 1933, Wisconsin and California produced 53.3 percent, and the five States of Wisconsin, New York, California, Illinois and Ohio produced 70.0 percent. ^{2/} In those areas wherein large urban centers are situated, notably the New England and Middle Atlantic areas, as well as in the territory immediately surrounding other urban centers, the larger part of the total volume of milk produced is utilized in the form of fluid milk and cream.

2. The interchangeability of the supply of milk between uses. The milk supply of the country is interchangeable between uses, especially so in the case of manufacturing uses. In general, there is little difference between the quality requirements for milk used in the production of evaporated milk, butter, cheese and other manufactured dairy products. In addition to the fact that milk is markedly interchangeable between the uses noted above as far as quality requirements are concerned, processing facilities for the different products are so intermingled geographically, and, in fact, are in many cases available in one plant, that the matter of the location of the producer with respect to processing facilities for the different products is usually not important in

^{2/} Manufactured Dairy Products, Bureau of Agricultural Economics, United States Department of Agriculture.

preventing producers from shifting their milk from one channel of disposal to another. Thus, should relative price conditions warrant, the producer can in most cases shift his milk from one use to another. In the case of those plants manufacturing two or more products, the producer does not have to shift his milk from one plant to another, the shift or change in the relative volume of milk entering the different uses being accomplished by the plant management, and for the same reason that would lead the farmer to shift his milk from one use to another.

The interchangeability of the supply of milk between milk produced for use as fluid milk and that produced for use in the production of various manufactured dairy products is not so marked as is the interchangeability of milk between the different manufactured products. This is due in large part to the fact that in most milk markets milk used as fluid milk must be produced in accordance with more stringent sanitary requirements than is the case with milk produced for use in manufactured dairy products. However, this factor operates, principally, to lengthen the period of time necessary for a producer to shift his disposal of milk from manufactured dairy products uses to fluid use. The producer, in order to shift from the production of manufacturing milk to the production of fluid milk, must equip his barn and follow the procedure with respect to sanitation that is specified in the health ordinances of the city or town in which he wishes to sell fluid milk. This involves additional expense in producing milk, but, if the farm price of fluid milk is sufficiently above the farm price of manufacturing milk, the producer will equip his barn and conform to sanitation regulations in order that he may sell fluid milk. Thus, although the degree of interchangeability of milk between fluid use and manufactured product uses is less marked than the degree of interchangeability of milk between the different manufactured product uses, producers can and do shift from the production of manufacturing milk to the production of fluid milk when price relationships warrant. Similarly, when the price of fluid milk declines to a point where it is not sufficiently high to cover the additional costs of producing milk for fluid consumption, producers discontinue the production of milk for consumption as fluid milk and produce milk for use in the production of manufactured dairy products.

C. Factors affecting the general level of the prices of dairy products.

1. Demand factors. Numerous factors influence the demand for dairy products, such as the volume of the money income of consumers, consuming habits, etc. Perhaps the most important of the factors affecting the demand for dairy products is the volume of money consumers have available for the purchase of goods. Thus, the prices of dairy products vary directly with the income of consumers (assuming constant supplies). The relationship between the index of the farm prices of dairy products and

the index of factory payrolls (taken as a measure of changes in the income of consumers) is shown in Figure 1. As was stated above, numerous factors affect the demand for milk. However, for the purposes of this paper, it is unnecessary to discuss them in detail.

2. Factors affecting the supply of milk. The changes in the volume of milk that will be forthcoming from a given number of cows due to changes in weather, pasture and crop conditions need no comprehensive treatment here, since it is obvious that sudden and wide variations in the weather, droughts and other unusual weather conditions that operate to reduce or increase the quantity and quality of feed relative to the number of livestock, all tend to cause variations in the supply of milk.

Aside from the factors noted above, changes in the prices of dairy products relative to the prices paid by milk producers for the articles used in milk production, as well as changes in the prices of dairy products relative to the prices of other farm products, affect the volume of milk produced. In the Middle West, for example, changes in the prices of competing farm products have an important effect on milk production. An increase in the price of beef, or a relative decline in the prices of dairy products, is sufficient to cause large numbers of farmers in this section, particularly in the area west of the Mississippi, to turn to raising beef steers and heifers and let the calves suckle the cows longer than was the practice before the change in relative prices. In addition, in numerous cases where more than one livestock enterprise is followed on the farm, a relatively larger volume of the feed available is fed to livestock other than milk cows when prices of alternative livestock products become favorable relative to the prices of dairy products.

D. Relationships between the prices of dairy products in different markets.

Since most manufactured dairy products are readily transportable, the price of a product such as butter tends to vary between markets by not more than the amount necessary to cover the cost of shipping the product (freight and handling costs) from one market to another. Thus, in Chicago, Illinois, situated in the large surplus butter-producing area comprising the East North Central and West North Central States, the price of butter is generally lower than in New York City by an amount sufficient to cover freight and handling charges from Chicago to New York City (New York City being located in a deficit butter-producing area). The decidedly close relationships between the prices of butter in different markets are shown in Figure 2.

The prices of cheese in different markets vary together (see Figure 3), partly for the same reasons as those advanced above with respect to butter and also because of the possibility of shifting from cheese production to the production of butter, which is more widely

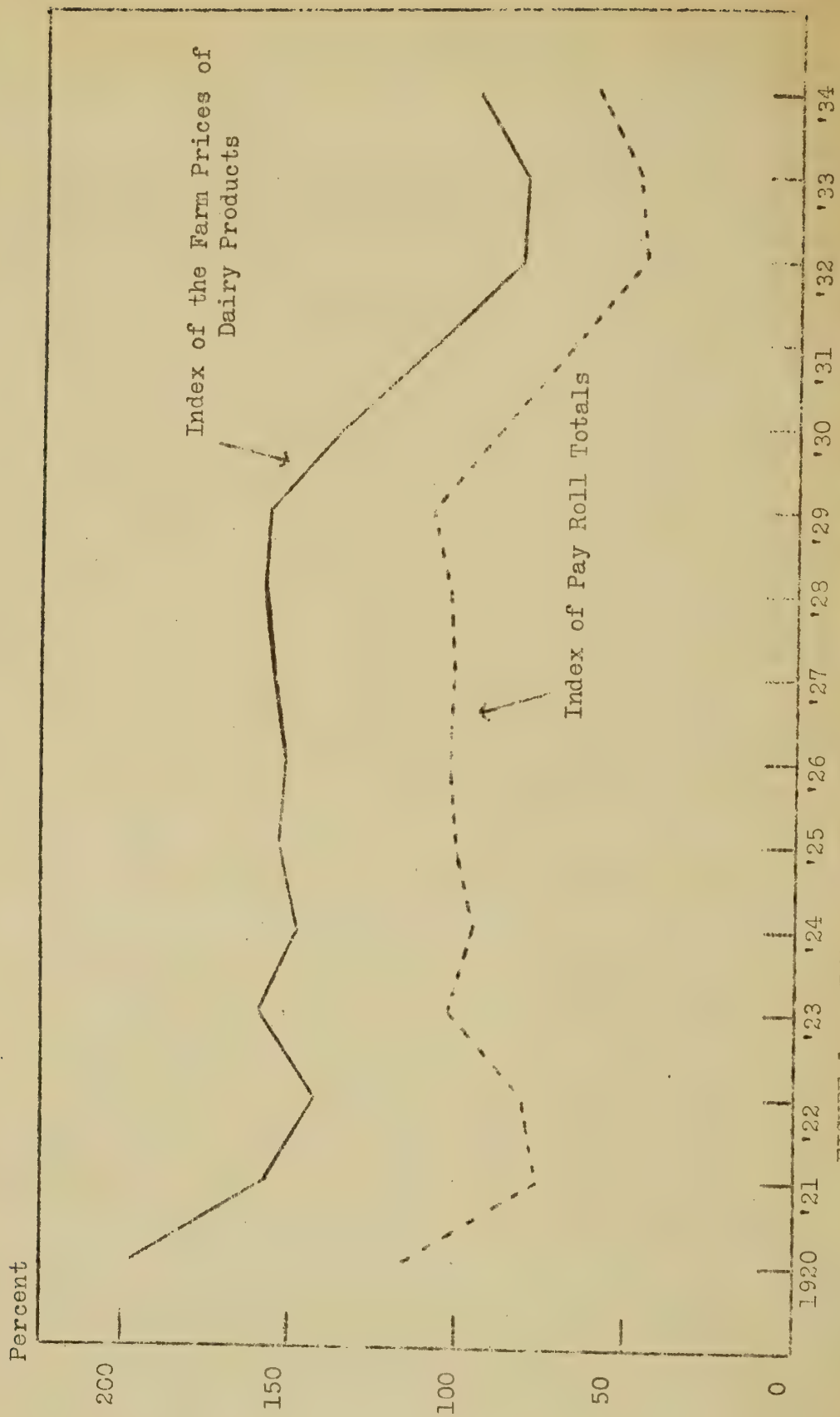


FIGURE 1. - INDEX NUMBERS OF U.S. FARM PRICE OF DAIRY PRODUCTS
(AUGUST 1909 - JULY 1914 = 100)

AND INDEX NUMBERS OF PAY ROLL TOTALS IN MANUFACTURING
INDUSTRIES (1923-1925 = 100)

1920-1934

transported. The same relationships exist with respect to evaporated milk.

In view of the foregoing, it should be evident that the market for the most important manufactured dairy products is national in character and that the price of milk or butterfat used in the different products noted above in any particular area is closely associated with the price of milk so used in any other area.

E. Relationships between the price of milk used in different products.

As was pointed out in B above, the supply of milk is markedly interchangeable between uses in the case of milk produced for manufacturing purposes and to a lesser extent between fluid milk and manufacturing milk uses. This factor operates to establish close relationships between the price of milk in different uses, in the country as a whole, as well as within areas. (See Figure 4.) Thus, although the price of milk produced for use as fluid milk is generally higher in any particular area than the price of milk produced for use in manufactured dairy products (for the reasons advanced in section B and section C), and therefore the market for fluid milk in any particular area may be considered as a local market, the price of milk produced for use as fluid milk varies with the price of such milk in any other area and also varies with the price of milk produced for use in manufactured dairy products, both for the country as a whole and in the different sections of the country.

Table 1. Wholesale prices of butter and cheese, index numbers of milk prices and index numbers of payroll totals, 1920-1934.

	Wholesale prices of American cheese	Index numbers of farm prices of all milk sold wholesale (Aug. 1909-July 1914: = 100)	Index numbers of prices paid to producers for 3.5% milk at condenseries (1910-1914: = 100)	Index numbers of prices paid by milk dealers for 3.5% milk used for city distribution (1910-1914: = 100)	Index numbers of payroll totals (1922-1925 = 100)	
Year	Wholesale: price of 92-score butter at New York per pound	Chicago: Single Daisies per pound	Chicago: Single Daisies per pound	Wisconsin: Twins (Wis. Cheese) per pound	Index numbers of prices paid to producers for 3.5% milk at condenseries (1910-1914: = 100)	Index numbers of payroll totals (1922-1925 = 100)
	Cents	Cents	Cents	Cents	Percent	Percent
1920	61.4	58.65	-	24.9	191	197
1921	43.3	41.68	21.46	18.3	158	149
1922	40.6	39.21	-	19.3	141	129
1923	46.9	46.03	-	22.1	155	150
1924	42.6	41.19	21.42	18.2	139	147
1925	45.3	44.07	24.44	21.5	142	149
1926	44.4	42.79	23.27	20.1	139	153
1927	47.3	45.73	25.51	22.7	141	152
1928	47.4	46.00	25.38	22.1	142	154
1929	45.0	43.75	23.63	20.2	142	157
1930	36.5	35.23	19.63	16.4	128	149
1931	28.3	27.05	15.41	12.5	98	123
1932	21.0	20.07	12.76	10.0	73	96
1933	21.66	20.79	13.08	10.2	72	89
1934	25.7	24.77	14.19	11.7	85	105

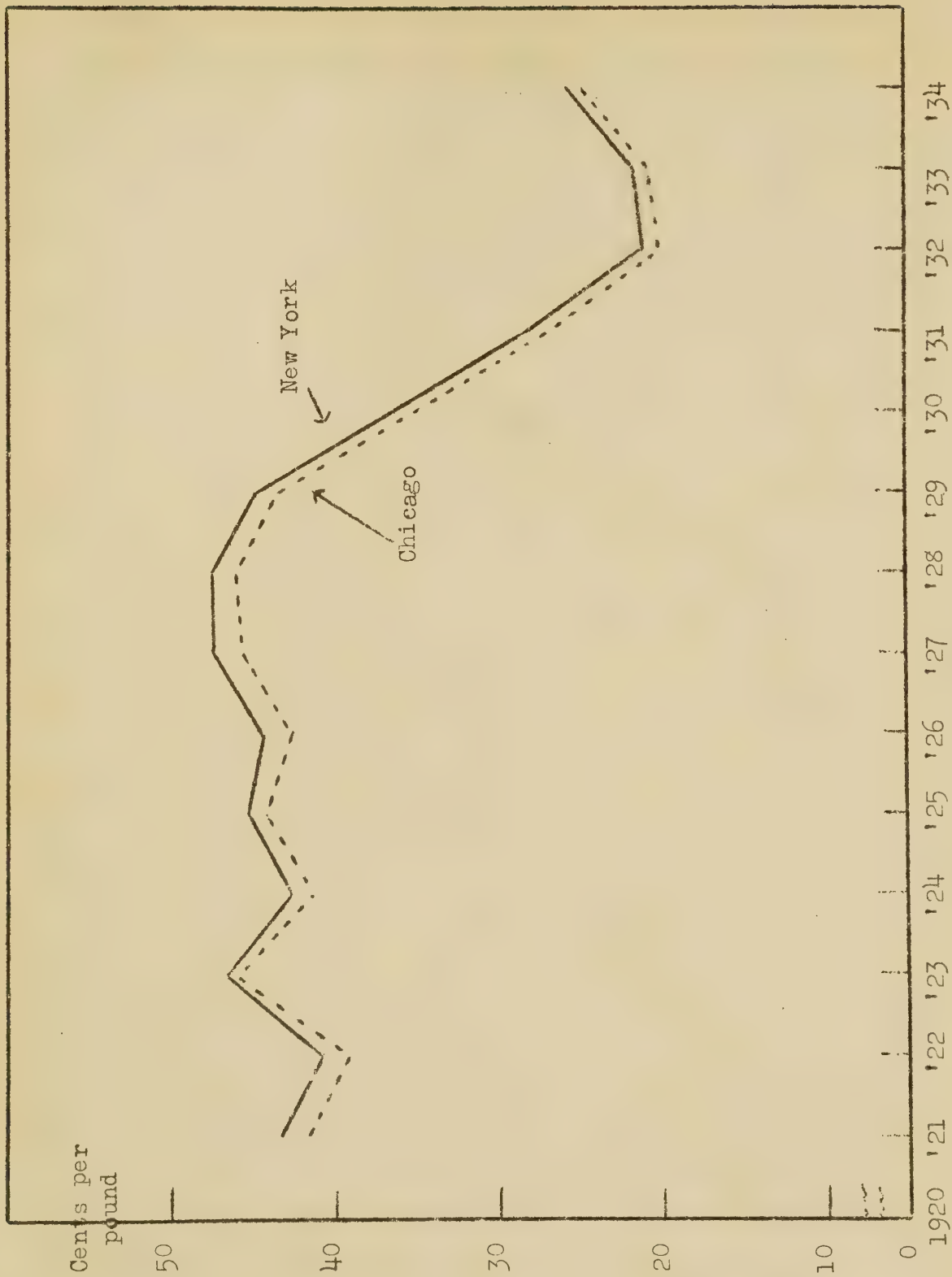


FIGURE 2. - WHOLESALE PRICE OF 92-SCORE CREAMERY BUTTER AT
NEW YORK CITY AND CHICAGO, 1921-1934.

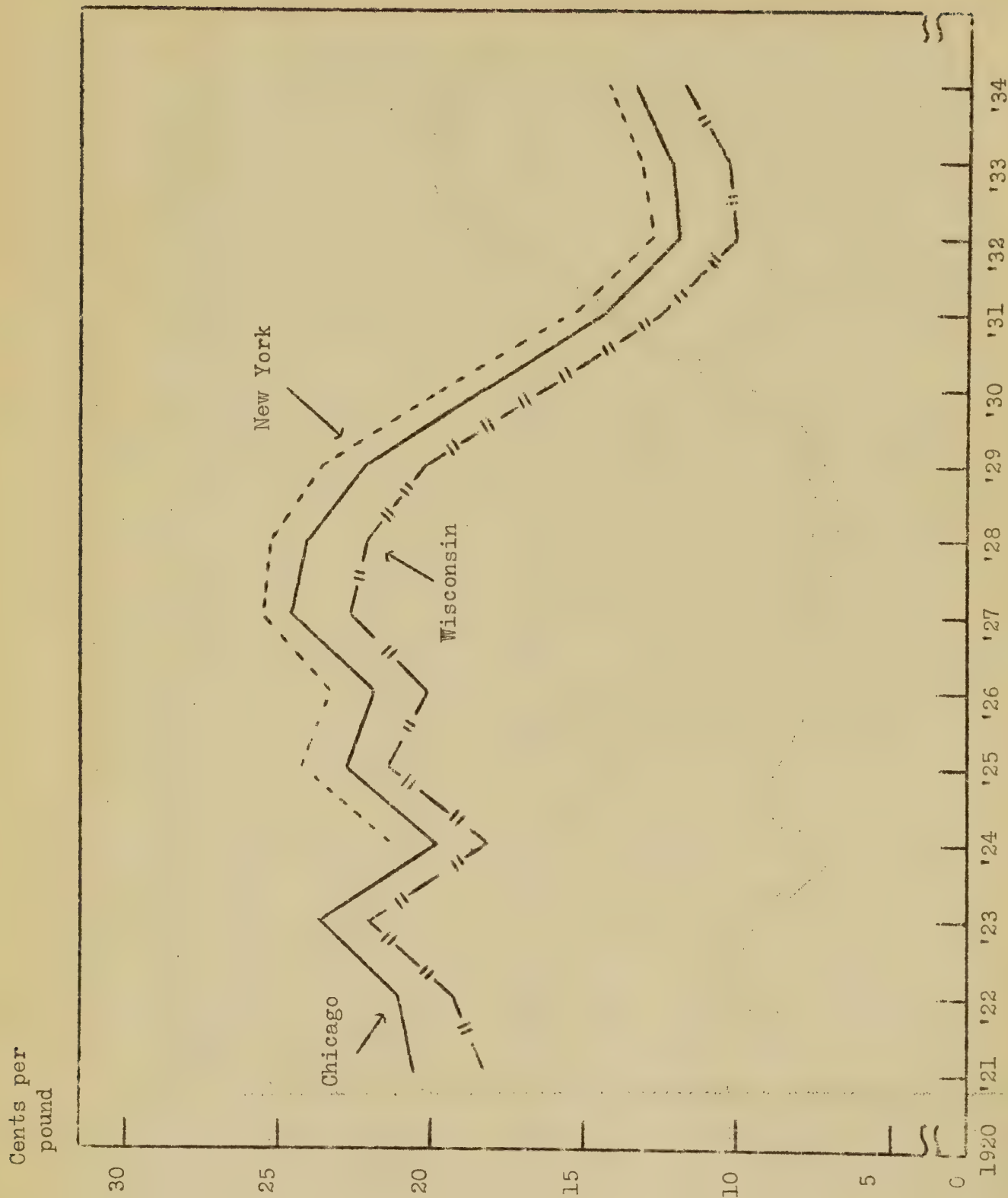


FIGURE 3. - WHOLESALE PRICES OF AMERICAN CHEESE - NEW YORK SINGLE DAISIES, CHICAGO SINGLE DAISIES, AND WISCONSIN TWIN'S (ON THE WISCONSIN CHEESE EXCHANGE), 1921-1934.

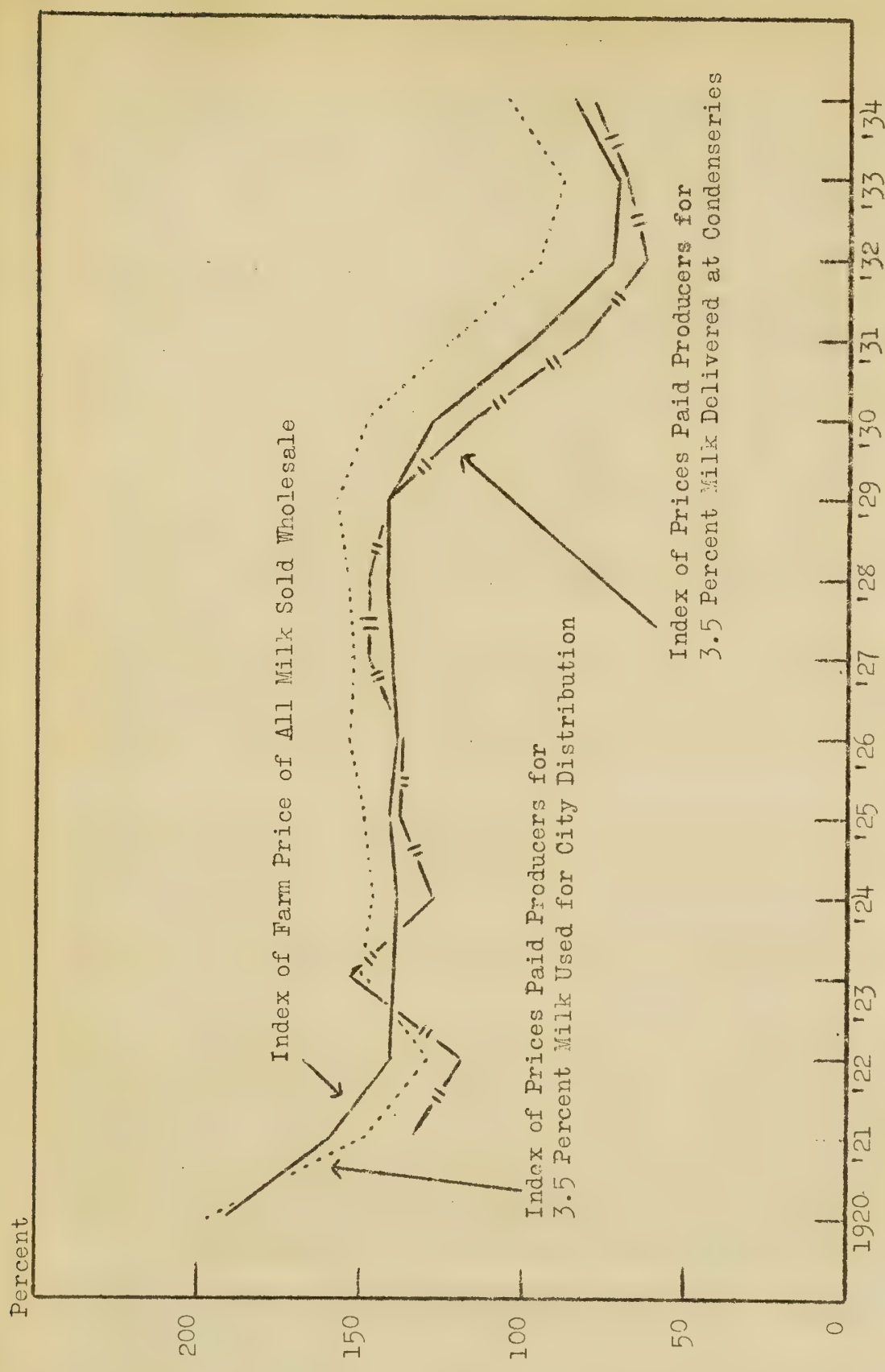


FIGURE 4. - INDEX NUMBERS OF FARM PRICES FOR ALL MILK SOLD WHOLESALE, INDEX NUMBERS OF PRICES PAID TO PRODUCERS FOR 3.5 PERCENT MILK DELIVERED AT CONDENSERIES, AND INDEX NUMBERS OF PRICES PAID BY MILK DEALERS FOR MILK TESTING 3.5 PERCENT BUTTERFAT, USED FOR CITY DISTRIBUTION AS MILK AND CREAM, UNITED STATES, 1920-1934. (1910-1914 = 100)

Part II

THE PRICE STRUCTURE FOR MILK WITHIN A MILK SHED

The terms under which milk is sold vary widely between markets. In some markets, usually small markets located within a surplus area or with few or no sanitation requirements, producers receive the same price f.o.b. the market for all milk, regardless of whether it is used for fluid milk, cream or manufactured dairy products. In other markets, while producers receive the same price for all milk sold, this price is a weighted average price which is computed by adding together the value of milk sold to distributors in accordance with a schedule of the prices for milk used for various products, and dividing the total sum so computed by the total volume of sales to distributors. In still other markets, producers receive two or more different prices for different portions of the milk which they deliver, a weighted average price for that portion of their milk sold as fluid milk and cream, and a lower price on the remainder, which is used in the production of manufactured dairy products. Again, producers may receive one price for that portion of their milk sold as fluid milk, another price for that portion sold as fluid cream, and still another price for that portion which is used in the production of manufactured dairy products such as butter, evaporated milk and cheese.

In this section, the relationships between the prices of milk used for different purposes f.o.b. city, and the farm price structure arising therefrom, are examined in some detail.

A. The price structure; uniform quality requirements - centralized processing.

For purposes of presentation, the price structure is examined in a hypothetical market, wherein factors operating to establish a differentiation in the prices of milk used in the production of different dairy products are assumed to be non-existent. One by one the factors operating to establish such differentiation in the prices of milk used in the production of different dairy products are considered, and thus the analysis of the price structure progresses from that of the highly simplified hypothetical market toward that of the most complex type of market. For purposes of analysis, therefore, it is assumed that:

1. There is a freely competitive market.
2. Local delivery costs and labor are the same for all classes of product.

3. There is no variation in the volume of milk consumed in different forms.
4. All milk, whether sold to consumers as fluid milk or other dairy products, is of uniform quality.
5. All milk is brought to the city in fluid form, there to be processed into the various dairy products.
6. There is no variation in the volume of milk sold per farm from day to day.

Under the conditions noted above, it is obvious that producers would receive the same per unit price for all milk brought to the market since each unit of the supply is interchangeable with every other unit. This would be true regardless of whether the milk were sold to the consumer as fluid milk, fluid cream, or manufactured dairy products.

However, it is well recognized that the butter and other manufactured dairy products equivalent of a unit of milk can be transported long distances at very low cost per product equivalent of a unit of milk as compared to the cost of transporting a unit of milk the same distance, and can be kept in storage for a relatively long period of time without appreciable deterioration in quality. Manufactured dairy products are composed largely of milk solids, or, stated differently, they are composed of one or more of the constituents of milk concentrated to a very much greater degree than in whole milk. Thus it is more economical to produce the finished product, such as butter, cheese, etc., at a distance from the market and transport the finished product to the market, rather than to transport whole milk to the market and there process it into the finished product (unless, of course, the demand for all the products of milk in the market can be satisfied from the volume of milk produced in the area immediately surrounding the market). For example, one hundred pounds of butter contain approximately 80 pounds of butterfat, and one hundred pounds of 3.5 percent milk contain 3.5 pounds of butterfat. Assuming that transportation costs per one hundred pounds of product are equal, the cost of transporting butterfat in the form of butter and in the form of 35 percent cream would be about $1/23$ and $1/10$, respectively, of the cost of transporting butterfat in the form of milk. The reasons given above suffice to explain why manufactured dairy products are produced, in many cases hundreds of miles from the market, and shipped to the market in finished product form rather than being shipped to the market in the form of fluid milk and there processed into the finished product.

B. The price structure; uniform quality requirements - decentralized processing.

For the purpose of considering the manner in which the transportation factor affects the price structure for milk within a milk shed, the preceding assumption that all milk is brought to market, there to be processed into the several milk products, is now dropped and, instead, in addition to the remaining assumptions noted previously, it is assumed that:

1. All the milk which is produced within 100 miles from the market is needed to satisfy the demand for fluid milk.
2. All the milk which is produced in the area between 100 and 150 miles from the market is needed to meet the demand for fluid cream.
3. All the milk which is produced within the area between 150 and 200 miles from the market is needed to meet the demand for evaporated milk.
4. All the milk which is produced within the area between 200 to 400 miles from the market is required to meet the demand for butter.
5. Transportation costs vary in direct proportion to distances at the following rates per unit per mile:
 - (a) Whole milk - .1 cent per hundredweight.
 - (b) The cream equivalent of 100 pounds of 3.5 percent milk - 0.2 cent.
 - (c) The evaporated milk equivalent of 100 pounds of 3.5 percent milk - 0.1 cent.
 - (d) The butter equivalent of 100 pounds of 3.5 percent milk - .05 cent.
6. The farm value of skim milk exactly equals the cost of separating cream from milk.
7. The f.o.b. city value of the butter equivalent of 3.5 percent milk (it is assumed that the over-run is necessary to cover the manufacturer's margin) is \$1.00.

Under the above assumptions the f.o.b. city prices that must be paid for milk in order to secure the volume necessary to meet the demand for milk, as well as the f.o.b. city prices that must be paid for the cream equivalent and evaporated milk equivalent of 100 pounds of milk to

meet the respective demands, can be readily computed. Thus, with the f.o.b. market price of the butter equivalent of 100 pounds of 3.5 percent milk at \$1.00, the farm price of 100 pounds of milk which is converted to butter at a point 400 miles from the market is \$1.00 less the cost of transporting the butter equivalent of 100 pounds of such milk to the market, or 80 cents ($\$1.00 - (400 \times \$.0005) = \$.80$). At a point 200 miles from market the farm price of milk used for butter is 90 cents ($\$1.00 - \$.10$ transportation costs = \$.90). If milk is to be used in the production of evaporated milk at a point 200 miles from the market, the farm price of such milk must be 90 cents per hundredweight or else farmers will sell their milk to butter manufacturers rather than manufacturers of evaporated milk. The f.o.b. city price of the evaporated milk equivalent of 100 pounds of 3.5 percent milk will be the farm price of 100 pounds of 3.5 percent milk at a point 200 miles from the market, plus the cost of transporting the evaporated milk equivalent of such milk to the market, or \$1.10 ($\$.90 + \$.20 = \1.10). Similarly, the farm price of milk used to produce cream at a point 150 miles from the city must be equal to the farm price of milk used to produce evaporated milk at that point, else farmers will sell their milk for use in evaporated milk rather than cream, and the f.o.b. city price of the cream equivalent of 3.5 percent milk will be the farm price of such milk at a point 150 miles from the market plus the cost of transporting the cream equivalent of 100 pounds of 3.5 percent milk from that point to the city, or \$1.25 ($\$.95$ farm price at 150 mile-point + \$.30 transportation costs to market = \$1.25). Similarly, the f.o.b. city price of 3.5 percent milk will be the farm price of milk used for cream at a point 100 miles from the market plus the cost of transporting fluid milk to the market, or \$2.05 ($\1.05 farm price at 100 mile-point + \$1.00 transportation costs to market = \$2.05).

Therefore, under the conditions assumed the prices for milk and milk products f.o.b. city would be as follows:

1. Fluid milk - \$2.05 per hundredweight.
2. The cream equivalent of 100 pounds of 3.5 percent milk - \$1.25.
3. The evaporated milk equivalent of 100 pounds of 3.5 percent milk - \$1.10.
4. The butter equivalent of 100 pounds of 3.5 percent milk - \$1.00 (assumed, but of course a different price f.o.b. the market for the butter equivalent of 100 pounds of 3.5 percent milk would be associated with different prices for the other milk products than those computed above).

Under the conditions assumed it is also obvious that milk would not be shipped to the city to be processed into the several dairy products

(except in case of error or lack of knowledge with respect to the most profitable channel of disposal, which is not possible under the assumptions set forth). Prices in the city would be quoted for milk, cream, evaporated milk and butter. All milk brought to the city would command one price, cream another, etc. Thus, there would be no differentiation in milk prices f.o.b. city.

The farm price for milk at any given point within any particular zone is, of course, equal to the farm price of milk at the outer edge of the zone plus the difference between the cost of shipping milk in the particular form to the market from the outer limit of the zone and the cost of shipping such milk from any given point within the zone. The farm price structure for milk that would obtain under the conditions set forth above is shown in Figure 5.

C. The price structure: varying quality requirements - decentralized processing.

If the assumption that all milk is of uniform quality is discarded, and it is assumed that the quality requirements for milk used in the form of fluid milk and cream are higher than those for milk used in the production of evaporated milk and butter, then the type of market under analysis is somewhat more comparable to the rather complex type of milk market now obtaining in many large urban areas.

Sanitation requirements vary somewhat between milk markets. Usually, the requirements cover such items of sanitation as periodic veterinary examination of cows, cleanliness of cows, cleanliness of dairy barns in addition to specifications with respect to the type of flooring, light, etc., specifications with respect to the type and care of the milk house, cleaning and care of utensils, and rules and regulations pertaining to milking and handling of the milk.

It should be obvious that the sanitation requirements under which milk for fluid milk and cream is produced, which in by far the larger number of cases are more stringent than the sanitation requirements under which milk for manufacturing purposes is produced, operate to increase the cost of producing milk for use as fluid milk and cream relative to the cost of producing milk for manufacturing purposes. Thus, over a period of time, the supply price ^{3/} of a given volume of milk used for fluid milk and cream will be somewhat higher than the supply price of the same volume of milk used for manufacturing purposes, other factors remaining constant. Of course, the difference between the supply prices of milk produced for use in different products in any milk supply area, other factors being the same, will depend upon the differences in the sanitation requirements applicable to milk produced for use in the different products. If it were assumed that sanitation requirements raise

^{3/} The price that must be paid in order that a given volume of milk of the desired quality be forthcoming.

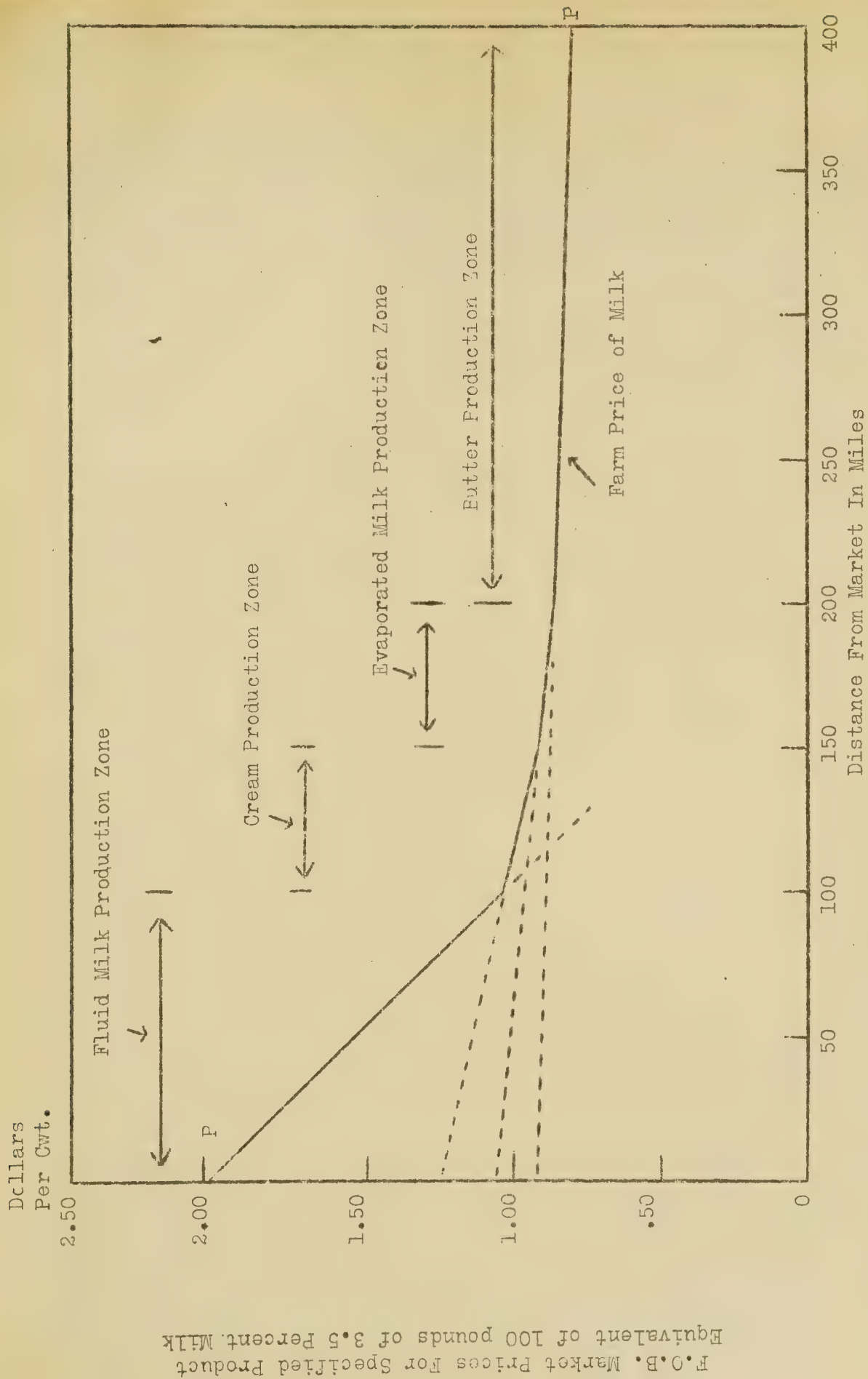


FIGURE 5. - PRODUCTION ZONES AND FARM PRICE STRUCTURE, FOR SPECIFIED DAIRY PRODUCTS AS DETERMINED BY THE TRANSPORTATION RATE STRUCTURE

the supply price of milk for use as fluid milk and cream 20 cents per hundredweight per farm above the supply price per hundredweight for milk used for manufacturing purposes, the price structure under the assumed conditions would be similar to that set forth in Figure 6 (a position of stable equilibrium is assumed, so that the f.o.b. city prices that prevail, and the farm price structure arising therefrom, are normal supply prices).

Under the conditions assumed, the prices for milk and milk products f.o.b. city would be as follows:

1. Fluid milk - \$2.25 per hundredweight.
2. The cream equivalent of 100 pounds of 3.5 percent milk - \$1.45.
3. The evaporated milk equivalent of 100 pounds of 3.5 percent milk - \$1.10.

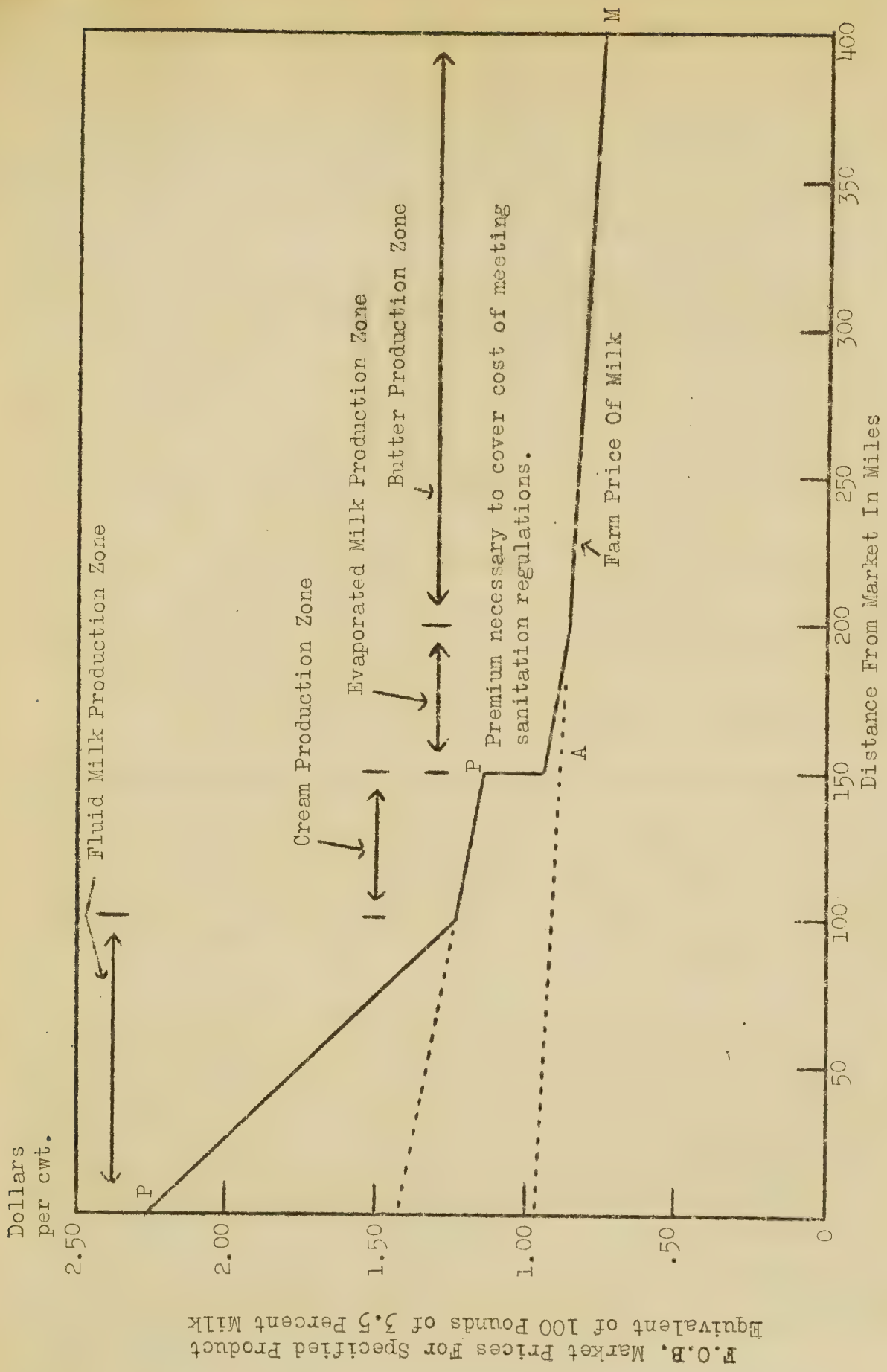


FIGURE 6. - PRODUCTION ZONES AND FARM PRICE STRUCTURE FOR SPECIFIED DAIRY PRODUCTS AS DETERMINED BY THE TRANSPORTATION RATE STRUCTURE AND SANITATION REGULATIONS FOR FLUID MILK AND CREAM.

F.O.B. Market Prices For Specified Product
Equivalent of 100 Pounds of 3.5 Percent Milk

4. The butter equivalent of 100 pounds of 3.5 percent milk - \$1.00.

In Figure 6, the line PP represents the farm price of milk used for fluid milk and cream; the line AM the farm price for milk used in the production of evaporated milk and butter. It should be noted that as yet no factor has been introduced that will operate to establish different prices for milk f.o.b. the city. Under the assumed conditions, all milk produced within a particular zone will be used in the production of the same product. Thus, no milk will be shipped to the market as milk from the cream zone, etc. Stated differently, there will be no differentiation between the price of milk based on the form in which such milk is sold f.o.b. city. Also, no factor has been introduced that will operate so that individual producers will receive different prices for different portions of their milk. Producers within each zone will sell all of their milk at one price. Farm prices in a particular zone will vary as transportation costs from different points in the zone to the city vary, and will vary between zones because of differences in transportation costs of milk and the product equivalent of milk, and because of differences in cost of producing milk engendered by differences in the sanitation regulations applicable to milk and milk products.

D. The price structure as affected by type of transportation.^{4/}

It should be emphasized that the foregoing treatment of the effects of the transportation rate structure and sanitation requirements on the price structure for milk has been greatly simplified for purposes of presentation. Variations in the transportation rate structure and sanitation regulations from those assumed bring additional complexities into the price structure.

One of the assumptions on which this analysis has been based so far is that transportation rates vary according to distance and weight only. However, several factors influence transportation costs, the more important of which are type of transportation (truck, tank car and railroad), complementary services, topography of country, volume, labor conditions, gasoline and truck costs, and local transportation arrangements. Some attention will be given to the effect of these various factors on the price structure and size of sheds for the different types of dairy products.

^{4/} This section is based largely upon a report prepared by Dr. J. M. Tinley, formerly Principal Agricultural Economist, Dairy Section.

1. Type of Transportation. From points relatively close to a market, producers frequently find it advantageous (or less costly) to transport their own milk to the city. Many producers use small trucks to transport feed, implements, etc., from the city to their farms or from one part of the farm to another and find it convenient to take their milk direct to a city plant. The farmer or a member of his family operates the truck and because of proximity to the city can reduce operating costs per cwt.-mile to a very low figure. However, as distance from the city increases, operation of a small truck per hundredweight milk increases rapidly. A large load becomes more economical so larger trucks are used. Few farmers have sufficient milk to supply a load for a large truck, so either a distributor, a private agency (hauler) or a cooperative association operates a truck and collects milk from several farmers.

After a certain distance varying between, say, ten and sixty miles, depending upon the topography, density of supply, etc., truck transportation becomes too expensive per hundredweight mile. It is expensive to operate a large truck (or truck and trailer) over country roads especially as production often becomes more scattered as distance from a city increases.

Under these conditions, milk is usually hauled by producers or by truck to a centralized country assembling point, cooled and loaded into a tank truck and hauled into the city. Also, there are definite limits to the distance from which milk can be hauled by tank truck. In some of the larger markets, milk is collected at country stations and cooled, and then shipped by train to the consuming center. In a few instances, milk is processed and bottled at a country point and shipped into the city for distribution.

In Figure 7 are shown, hypothetically, the transportation costs on milk into a large consuming center.^{5/} For the first ten miles, milk producers will haul their own milk, the lowest cost being five cents a hundred pounds (most of which is for handling costs). The total cost rises as distance from the consuming center increases, but after about fifteen miles, costs rise very rapidly. There is a zone in which milk may either be handled by the producer or by truck. From about twenty miles, however, it becomes more economical to haul by truck. This is probably true up to about seventy miles. From seventy to ninety miles is another zone of indeterminateness in which milk may be hauled either by truck (in cans) or assembled and hauled in tank truck.

^{5/} The variations here discussed are not considered in later Figures. Therefore, a different set of rates has been assumed, under which the differences in rates have been magnified.

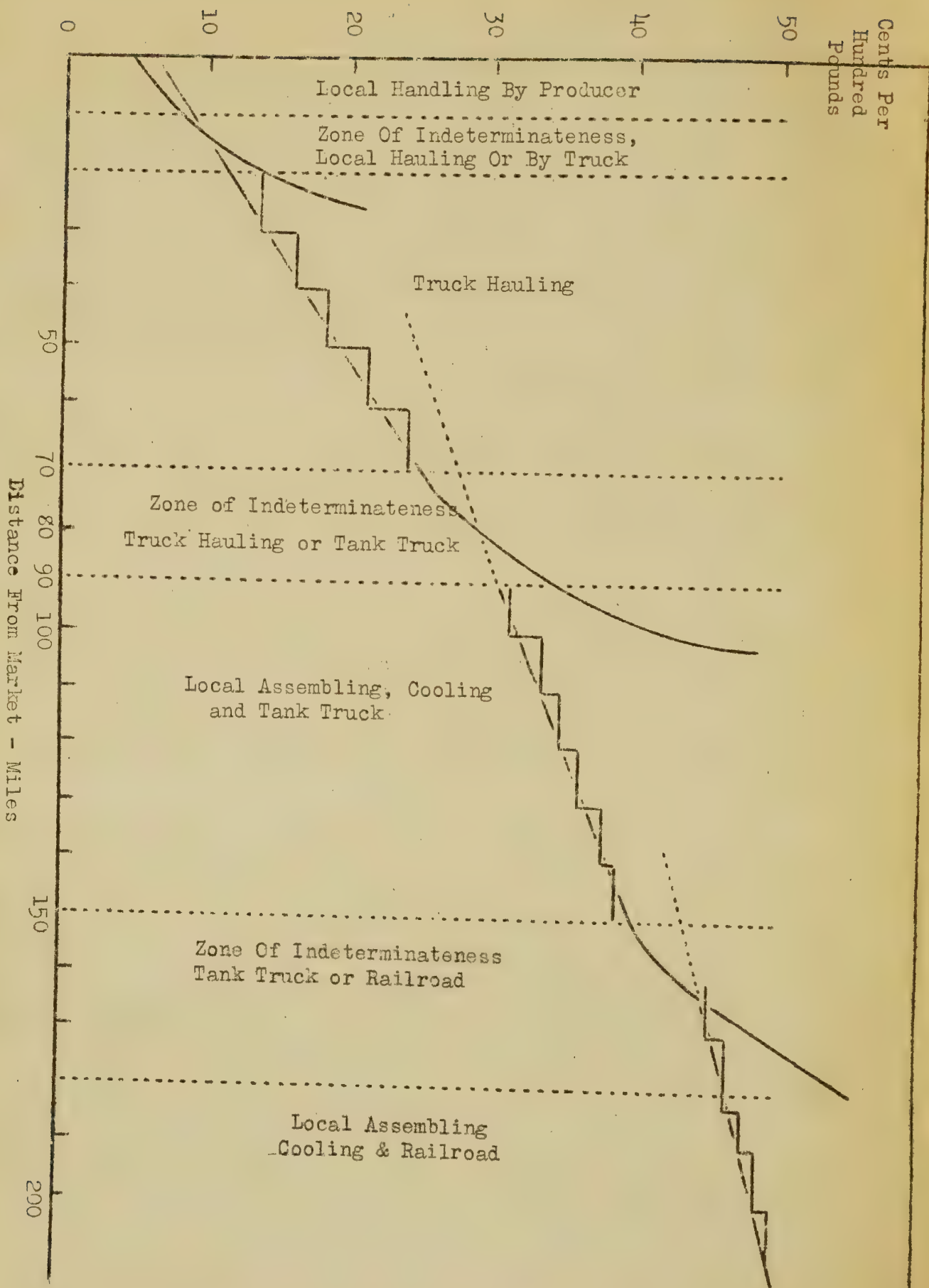


FIGURE 7. -- THE INFLUENCE OF TRANSPORTATION RATE STRUCTURE UPON THE PRICE STRUCTURE FOR MILK ^{1/}

^{1/} See text for assumptions on which diagram is based.

From ninety to one hundred and fifty miles, milk will be hauled in tank trucks, but for greater distances the time of hauling and load limitation would tend to make it more economical to assemble milk at a country plant and transport milk to city by train. There is a zone of indeterminateness from 150 to 180 miles in which milk may be hauled either by tank car or by railroad.

These distances would vary from market to market depending upon topography, state of roads, density of supply, relative costs of different methods of transportation, etc.

Transportation rates are commonly set on the basis of zones, under which rates, instead of increasing directly in proportion to distance, increase in a series of steps as is shown in Figure 7.

2. Complementary Services. Transportation rates usually include some elements of cost other than mere hauling. Milk has to be loaded and unloaded, iced or refrigerated. These are usually more or less fixed costs and do not vary with the length of haul. Thus the longer the distance hauled the lower these costs become per mile, resulting in a tendency for transportation rates per unit to decline as distance increases.

There is somewhat greater risk in hauling milk than in hauling butter -- milk has to be handled with more care and speed. For this reason a particular transportation agency may charge a higher rate for hauling an equal volume or weight of fluid milk than for butter or evaporated milk.

3. Rate Schedules. Many transportation agencies, especially railroads, do not arrange their rate schedules by miles, but by zones. It is thus possible that the rate will be the same on milk hauled 101 miles and 120 miles.

4. Topography of Country. Transportation costs per mile are usually somewhat higher in mountainous and hilly country than in flat, level country. This is due to the fact that more fuel is consumed, fuel costs are themselves high, there is more strain on vehicles and speed is greatly reduced. The condition of the roads is also important. Narrow, winding roads greatly reduce the speed of trucks and to a certain extent regulate the type of trucks that can be used.

5. Volume of Milk. Where dairies are small and scattered, the costs of collecting milk are considerably higher than where production is more concentrated. Frequent stops to pick up small quantities of milk and a long distance between stops materially increase hauling costs.

Railroads usually charge different rates, depending upon whether the commodity is hauled in carlot or less than carlot units.

6. Labor Conditions. An important part of hauling costs is the expenditure for truck drivers and mechanics. In cities where labor is cheap, rates may be somewhat lower than where wages are high.

7. Gasoline and Trucks. The prices of gasoline, oil, trucks and spare parts vary considerably in different parts of the country. This may have a material influence on hauling costs in different localities.

8. Control of Hauling. In some markets, all transportation is handled by one agency or by not more than two or three agencies. This reduces overlapping of routes to a minimum and should result in lower unit operating costs. In other markets, each producer or each distributor undertakes to make his own hauling arrangements. In such markets, a great deal of overlapping may occur. Efficient use is not made of transportation facilities, and consequently rates will tend to be higher than where there is centralized control of hauling.

The foregoing serves to indicate some of the factors that affect the transportation rate structure for milk.

E. The price structure as affected by the type of sanitation regulations.

Some of the factors that must be taken into account in determining how sanitation requirements affect the price structure for milk in different milk sheds and for a particular shed are as follows:

(1) The sanitation regulations in force in the milk shed. ~~sanitation~~ regulations are much more stringent in some markets than in others. There is, therefore, no possibility of developing a generally applicable cost figure which could be applied to the price structure for milk within a particular market and used in the practical determination of milk prices within a particular milk shed.

(2) The cost of meeting sanitation regulations, even though the regulations are the same in some markets as in others, may be widely different. Labor and material prices may vary materially between different markets, so that, even though the regulations may be exactly the same between particular markets, the cost of meeting the sanitary regulations may vary materially.

(3) In addition, health and sanitation regulations may be of such nature as to permit only those producers located relatively near the market to qualify as fluid milk producers. For example, the imposition

of a regulation requiring that fluid milk shall be delivered to the consumer within a given number of hours from the time it is produced would automatically set a maximum distance over which milk could be transported and might reduce materially the area from which fluid milk could be shipped to the market. In this case the price for fluid milk would increase until consumption was reduced, or until production within the area was increased, or both, to the point where the market would just use the milk produced within the new zone. This, of course, would increase the price spread between fluid milk and the product equivalent of milk used in other dairy products f.o.b. the market, and would increase the farm prices of fluid milk relative to the farm price of milk used in the production of other dairy products.

Also, sanitation regulations may not increase the costs of meeting the sanitation regulations by the same amount per unit of product on all farms. Some farms are better equipped than others and hence have smaller additional expenditures to meet requirements. Large dairies can ordinarily utilize equipment more economically and, therefore, their cost per unit for milk houses, cooling equipment and other outlays commonly required by health and sanitation regulations is lower. Such dairies have their competitive position improved by the raising of inspection requirements and may increase their production. Others may tend to shift to cream, or butter production, rather than make the additional outlays necessary. Depending upon these effects on supply, zones from which the various products are shipped to the market may be either enlarged or reduced by the imposition of or changes in the sanitation regulations.

While this discussion of the price structure has been developed entirely in terms of transportation costs and costs of meeting health and sanitation requirements, it should be apparent that variations in costs resulting from other causes will work out in practically the same manner. The important distinction is between the effects on the price structure of those costs which vary with distance from market, as does transportation, and costs which are likely to be rather uniform regardless of distance from the city. The influence of each of these types upon the price structure for milk is illustrated in a general manner by this analysis of transportation costs and costs of meeting health and sanitation regulations.

Variations between farms, such as those due to available equipment, type and condition of herds, type of land, labor supply and even personal preferences, will partially determine which farmers will produce milk for the various uses. Also the relative significance of these latter factors becomes greater as class differentials become smaller near the boundaries of zones. Therefore, their principal effect

is to cause the boundaries between the areas in which the several classes are produced to be less clearly defined than would be indicated by the simplified example set forth in the analysis.

(4) Also, there are higher sanitation regulations for fluid milk than for cream in some markets. This operates to establish higher supply-prices for milk produced for use as fluid milk than for milk produced for use as fluid cream.

The foregoing serves to indicate in a general way the manner in which sanitation regulations affect the price structure for milk within a milk shed, and how differences in the sanitation regulations may affect the price structure in different milk sheds.

F. The price structure; decentralized processing - uniform quality requirements - variations in production.

The manner in which the transportation rate structure and sanitation regulations affect the price structure for milk within a milk shed has been set forth in some detail in the preceding pages. In order to approach more nearly the price structure for milk as it actually exists in many milk markets consideration will be given to the price structure under the conditions that prevail when the assumption that there is no variation in production is dropped.

There are marked variations in the production of milk, which are perhaps most easily classified on the basis of time periods, such as day to day, week to week, year to year, and long time variations. There is some day to day variation in production, although this type of variation is undoubtedly negligible. The seasonal variation that takes place in milk production within most milk sheds ^{6/} is marked, production in the fall and winter months usually being much less than production in the spring and summer months. This type of variation is due largely to such factors as (1) the greater supply of succulent feed available during the pasture season, (2) time of freshening of cows, (3) inclement weather during the winter months, etc. In some areas, the seasonal variation in production is much more extreme than in others ^{7/} and even within the same area, production often shows a more marked seasonal variation in some regions than others within the area.

Year to year changes in production are due to such factors as (1) differences in feed production conditions that are associated generally with differences in weather and growing conditions, (2) shifts into and out of the dairy business due to changes in the relative

^{6/} Ross, H. A., Cornell University, Agri. Exp. Station Bulletin No. 527; also based on production data secured with respect to the markets operating under Federal milk licenses.

^{7/} Based on production data secured with respect to the markets operating under Federal milk licenses.

profitableness of milk production as compared to other types of agricultural production, (3) other factors that may operate intermittently, such as the imposition of a sanitary regulation to the effect that all milk sold in the market as fluid milk and cream must come from cows free from tuberculosis, which may operate to cause a marked decrease in the number of milk cows within the area, reduce production within the area quite markedly for a short period, and necessitate a temporary increase in the size of the milk shed.

Cyclical and long-time changes in production are probably associated with long time trends in demand, such as changes in the consuming habits of the people, the ebb and flow of population in urban centers and other factors such as changing opportunity cost relationships and type of farm organization and operation which set the limits of expansion of production within a given area, etc.

Seasonal variation is one of the most important types of variation in production. For purposes of presentation, therefore, the manner in which seasonal variation in production affects the price structure for milk within a milk shed is considered, with all other types of variation in production noted above held constant. ^{8/}

For most milk markets the volume of milk sold to consumers as fluid milk and cream varies somewhat from season to season, but the production of milk varies much more seasonally. Thus, during the period of low production, the production of milk within a milk shed may be just sufficient to meet market requirements (an amount about ten percent in excess of average daily sales), while during the season of flush production the volume of milk produced within the milk shed is usually far in excess of market requirements.

For purposes of presentation, it is assumed that (1) during the period of low production the volume of production within the 100-mile zone (see Figure 5) is equal to market requirements for fluid milk, (2) the sanitation regulations are the same for all milk regardless of the form in which it is sold, (3) production varies seasonally, (4) there is no difference between the seasonal production curves of individual producers, and (5) there are no variations in consumption other than daily. Under these conditions, there are several lines of procedure which distributors might follow with respect to purchasing milk from producers, such as (1) expanding and contracting the area from which milk is secured inversely to the expansion and contraction of milk production, (2) taking all the supply of milk produced within a given area (wherein the supply during the period of low production is just sufficient to meet the market requirements for fluid milk)

^{8/} For ease in presentation, the examples used to explain certain points are stated in terms of fluid milk only throughout the remainder of this paper. The same treatment is applicable in a general way to other dairy products.

and paying producers prices low enough to enable distributors to secure a high enough margin on fluid milk to cover the losses incurred in handling manufacturing milk during the period when supplies are larger than fluid requirements, or (3) purchasing milk from producers under a price arrangement which encourages producers to produce an even volume of milk throughout the year.

If distributors elected to secure their market requirements for fluid milk by contracting and expanding the area from which they draw their supplies inversely to the seasonal variation in production, refusing to take the production of distant shippers during the season of low production, the zones from which fluid milk would be drawn at different periods of the year would show marked difference from that shown in Figure 5. If, during the period of low production the volume of milk produced in the area within 100 miles of the market were sufficient to meet fluid requirements, the volume of milk produced within this zone would be far in excess of fluid requirements during the period of heavy production. For example, if the volume of milk produced during the peak production period were 40 percent above that produced in the low production period, the milk shed would be markedly contracted, about 40 percent in area if the density of production were constant throughout the area, but more than this if, as is often the case, the density of milk production declines as distance from market increases.

Assuming that the price of milk during the low production period were \$2.05 f.o.b. city, and the farm price structure the same as that indicated in Figure 5, the f.o.b. market price during the period of high production would be less than the f.o.b. market price during the season of low production by an amount equal to the saving in transportation costs involved in securing the supply of milk closer to the market during the flush period, and would vary between these limits during the year, depending upon the extent of the area wherein the volume produced was needed to meet fluid requirements. The farm prices would vary in the same manner, being equal to f.o.b. market prices less the cost of transporting milk to the city.

There are several factors, however, that operate to cause distributors to secure their milk from the same area throughout the year, rather than expanding and contracting the geographical scope of their operations to secure only that milk needed to meet fluid milk requirements. It is a matter of grave concern to the distributor that he be assured of a volume of milk sufficient to meet his market needs. Therefore, the risk involved in dropping a source of supply during the season of flush production, when it is practically certain

that that source will be needed during the season of low production, is a factor operating to check such action, since the distributor can never be certain that some competitor will not immediately furnish the shippers he dropped with an outlet for their milk, thereby forcing him to seek even more distant sources of supply during the season of low production.

Another factor of importance in this connection is that related to the costs of procuring milk from a rather constant area, as compared to the cost of procuring milk from an area that varies markedly throughout the year both in geographical extent, and the number of individual sources of the raw material. It undoubtedly costs less to procure milk from an area that stays rather constant with respect to geographical extent and number of producers, than from an area that varies markedly throughout the year in geographical extent and number of producers. Some of the savings are: (1) there are fewer field men needed to contact producers and secure their patronage, (2) bookkeeping and office expense is lower due to the fewer number of producers for whom accounts must be kept, statements must be prepared, and to whom payments must be made, (3) fewer laboratory tests have to be made, resulting in savings in laboratory technician labor costs, laboratory supplies, etc., (4) fewer individual containers have to be handled, involving savings in receiving labor, can washing, and sampling, and (5) there is less cost involved in furnishing various services to producers. It appears, then, that distributors can afford to pay producers a premium for evenness of production, so that they may, through the payment of such premium, secure the volume of milk needed by them to meet their fluid milk requirements from an area smaller in extent geographically, and in numbers of individual sources of supply, rather than securing their supply from an area that contracts and expands markedly as production decreases and increases seasonally. The amount of the premium distributors can afford to pay in this connection is the difference in the costs of procuring their milk supply from an area that remains practically constant in geographical extent and in number of individual sources of supply, and the cost of procuring milk from an area that varies markedly in geographical extent and the number of producers from whom milk is purchased.

There is another factor that exerts a tendency to cause the distributor to pay producers a premium for evenness in production. It has been pointed out previously that a volume of milk perhaps 10 percent in excess of average daily sales must be brought to market to meet daily variations in the volume of milk sold to consumers as fluid milk. In order to handle this volume of excess milk, which might be termed the daily operating reserve, the distributor has to integrate a by-product

enterprise with the main enterprise, or find some other channel of disposal. However, as far as this operating reserve is concerned, it is of such constant volume^{9/} that efficient methods of disposal as manufactured products can be developed. It is the marked variation in the seasonal excess and the difficulty of handling it efficiently that is an important factor in leading distributors to endeavor to secure a more even volume of supplies. This arises because more efficient methods of handling the excess can be developed when the supply is constant than when it varies markedly. Thus, during the season of flush production the distributor has to convert to other uses, or someone else does it in his stead, a volume of milk that may be several times as great as the volume so converted during the season of low production. This may be demonstrated by reference to some assumed figures, as follows:

1. The volume of milk sold daily as fluid milk throughout the year is 10,000 pounds.

2. The volume of milk brought to market is 11,000 pounds (10 percent of average daily sales needed to meet daily variations in fluid milk sales) in the season of low production and 14,000 pounds during the season of flush production.

The volume of milk that is diverted to uses other than fluid milk is therefore 1,000 pounds per day during the season of low production and is 4,000 pounds per day during the flush period, or 3,000 pounds greater than during the low period. This is entirely a seasonal excess (3,000 pounds of the 4,000) and represents an increase in the output of products other than fluid milk of 300 percent. Of course, under actual conditions, the increase in the volume of milk diverted to uses other than fluid during the flush season will be dependent upon the actual seasonal variation in production, which will, in some cases, be greater, and in other cases less, than indicated in the above example.

The seasonal excess in production therefore raises serious questions as to how it may be handled efficiently. It undoubtedly costs far more to handle a volume of excess milk that fluctuates markedly from season to season, as does a seasonal excess, than it costs to handle a volume of excess milk that remains rather constant from season to season. This is due to the fact that equipment, and in many cases labor, must be available to handle a peak load far in excess of the load during the period of low production when only a small volume of milk, equal to about 10 percent of average daily sales,

^{9/} Assumed, but practically all available data indicate that it is actually quite constant.

is converted to uses other than fluid milk. The distributor, therefore, can afford to pay a premium for evenness of production in addition to that already noted, the size of the premium being approximately equal to the difference in costs involved in handling a constant volume of excess (the operating reserve) as compared to handling a widely fluctuating volume of excess milk (the seasonal excess).

The foregoing indicates that distributors are able to pay a premium for evenness in production. It appears that it would be a matter of indifference to distributors whether they paid a given sum of money, including premiums for evenness of supply, to secure a particular volume of milk, or paid a sum of money about equal to the former for a similar volume of milk, the latter sum, however, being paid partly to producers delivering an uneven volume of milk, and partly for extra costs involved in procuring milk from an irregular area. In the former case, the farmer gets a higher percentage of the total volume of money expended for milk purchases and operating costs by the distributor than in the latter case, but total costs to the distributor remain about the same. It is probable that it is a matter of indifference to distributors whether they pay out a given sum of money in the one manner or the other. If distributors elect to secure their milk supply without paying producers a premium for evenness in production, it is evident that the seasonal variation in producers' prices would be quite marked.

It is, obviously, more economical to secure milk that is to be sold as fluid milk from sources near the market and to process the seasonal excess into milk products other than fluid milk at points outside the area wherein production is just necessary to meet fluid requirements, since the cost of transporting the fluid milk equivalent of manufactured dairy products from any given point is much greater than transporting such products to market in finished form. Of course, the extent of the saving will depend upon the size of the area and the like. Thus, during the period of flush production, fluid milk would be drawn from a point much nearer to market (depending upon the seasonality in production and relative density of production throughout the area) than during the season of low production. F.o.b. market prices for fluid milk during the year would vary directly with differences in costs of transporting milk from different points within the area. Thus, if milk is transported only 50 miles during the flush period and 100 miles during the low period, f.o.b. market prices, assuming transportation costs of 1 cent per hundredweight per mile, would vary within a 50-cent range during the year, being 50 cents higher during the period of low production than in the period of high production. Farm prices would vary in the same manner, being equal to f.o.b. market prices less transportation costs.

If, however, milk is brought to the market in fluid form and is then diverted to more concentrated forms such as cream, evaporated milk and butter, the product equivalent of such milk will sell at prices f.o.b. the market equal to the price at which the product can be shipped to the market from distant areas. Thus, if the butter equivalent of milk can be brought to the market from distant sources for \$1.00 f.o.b. the market (farm price plus transportation costs on the butter equivalent of 100 pounds of milk), the butter equivalent of milk brought to the city in fluid form will sell for only \$1.00 f.o.b. the market. The farm price of such milk would be materially less than \$1.00 per hundredweight. For example, if milk is shipped 50 miles and transportation costs are 1 cent per hundredweight per mile, the cost of transporting a hundredweight of such milk is 50 cents. If the product equivalent of such milk sells for \$1.00 f.o.b. the market, then the farm price of such milk would be 50 cents. Of course, if such milk is shipped any great distance as fluid milk, the product equivalent f.o.b. the market may not sell for enough to more than cover transportation costs from the farm to the market. Therefore, if milk is shipped to the market in fluid form for any appreciable distance and then converted to more concentrated products, farm prices for fluid milk are decreased appreciably. Under these conditions the seasonal variation of prices paid producers would be much more pronounced than that obtaining under the conditions treated previously.

G. The price structure, decentralized processing, special quality requirements for fluid milk - variations in production.

The seasonal variation in prices to producers would be even more marked than under the conditions treated previously if there were higher quality requirements for milk produced for use as fluid milk than for milk produced for use in other products.

This can be demonstrated quite readily by reference to the following example wherein it is assumed that (1) distributors bring to the market only that milk needed to meet their fluid requirements, which are assumed to be constant; (2) the area from which the fluid milk is drawn is contracted and expanded inversely to the seasonal variation in production; (3) distributors contract with producers to take their milk only for the periods wherein it is needed (obviously, under this sort of an arrangement the milk of some producers would be used as fluid milk all of the time while that of others would be so used at only certain specified seasons in the year); (4) the cost

of meeting sanitation requirements, if all milk were sold as fluid milk during the year, would be 20 cents per hundredweight per producer; (5) the alternative farm value of milk sold for any other purpose is \$1.00 per hundredweight; (6) transportation costs vary uniformly with distance, at one cent per hundredweight per mile; (7) during the season when the milk of producers in outlying areas is not needed for fluid milk uses, there are plants available for manufacturing it into other dairy products.

Under these circumstances the total yearly cost of meeting fluid milk requirements for outlying producers, or, rather, for those producers who sell their milk as fluid milk for a short period during the year, would have to be covered in a much higher farm price^{10/} for the months during which they sell their milk as fluid milk. Under these assumptions, a producer selling his milk as fluid milk during the entire year would incur only 20 cents per hundredweight additional expense for meeting sanitation regulations. On the other hand, the producers who sold milk as fluid milk one month of the year would incur equal expenses over the entire year, or approximately twelve times as great per unit for the month during which such milk is sold as fluid milk. Thus, during the season of low production the farm price must be sufficient to cover, during one month, the entire cost of meeting sanitation regulations for the entire year, which, in the assumed case, would amount to approximately \$2.40 per hundredweight above the alternative use value for milk at the farm. The operation of this factor is depicted graphically in Figure 8.

Under these assumptions the f.o.b. city price (farm price plus transportation costs) ranges from \$2.20 per hundredweight during the month of high production to \$4.95 per hundredweight during the month of low production. If, as assumed, distributors purchase a uniform quantity of milk per month, the weighted average price would be approximately \$2.90 per hundredweight. If, however, production within the area within 100 miles of the market (see Figure 8) were uniform from month to month at a level equal to production during the month of high production obtaining in the example set forth above, the f.o.b. market price throughout the year would be \$2.20 per hundredweight as compared to the weighted average price of \$2.90 per hundredweight prevailing under the conditions as set forth in the previous example. If, therefore, the distributor

^{10/} Of course, part of the expenses of producing milk in conformance with the sanitation regulations is fixed, and part of them is variable. This introduces an additional complexity, and probably operates to change the seasonal price curve from that set forth in this analysis. However, it does not appear necessary to develop this point further for the purposes of this paper.

Farm Price Structure - Special Sanitation Requirements for Fluid Milk - Fluid Milk Area Varied Inversely to the Seasonal Variation in Production

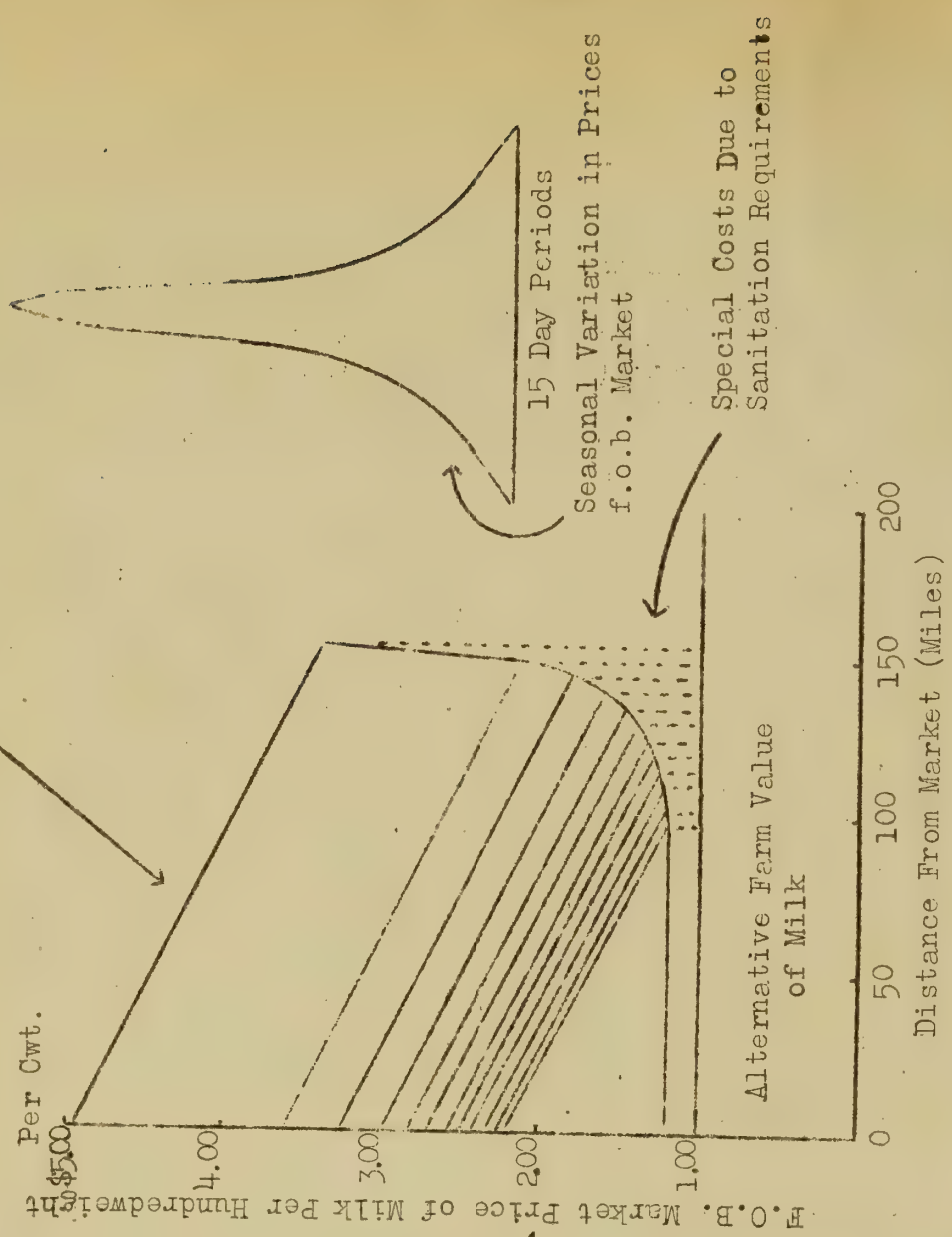
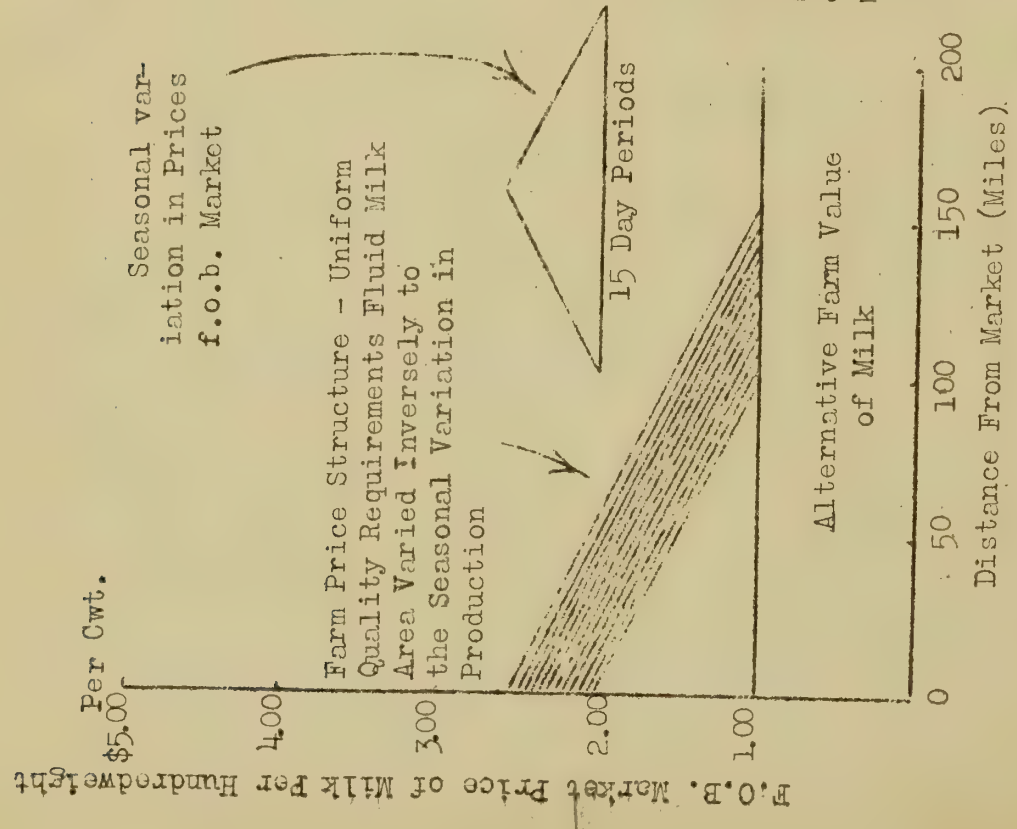


FIGURE 8. - THE PRICE STRUCTURE FOR FLUID MILK WITH DECENTRALIZED PROCESSING, SPECIAL QUALITY REQUIREMENTS FOR FLUID MILK ASSUMED.

could procure his milk supply from producers who produce a constant volume of milk throughout the year, it is to his best interest to do so, since he could secure his milk supply for less total cost than would be the case otherwise. 11/

It should be noted that the marked seasonal variation in prices, which in any particular market would be different from that set forth above, depending upon the degree to which conditions in the market and the supply area vary from those assumed in the example, would in time be partially corrected by producers within the area changing their seasonal output curves in order to sell a larger volume of milk during the period when prices are seasonally high. However, it would be greatly to the advantage of some producers to shift their seasonal output curves, and little if any to others, depending upon the type of farm organization and operation followed by each.

It has already been indicated that distributors can afford to pay producers in such a manner that evenness in production is encouraged, due to the economies in procurement costs in securing milk from an area that is rather constant geographically and in number of individual sources of supply rather than an area that varies markedly in geographical extent and in the number of individual sources of supply. Also, it has been indicated that the economies involved in handling a minimum and rather constant volume of excess milk furnish an incentive for distributors to pay producers in such a manner that evenness in production is encouraged, in addition to the incentive noted above.

Heretofore it has been assumed, for purposes of analysis, that there is no difference between the seasonal production curves of individual producers. This assumption is now discarded and the analysis focused upon conditions more nearly in accordance with those that prevail in actual markets. It is well recognized that there are marked differences between the seasonal production curves of different groups of producers as well as individual producers. 12/ Thus, in any particular milk market there are many producers who produce milk practically in accordance with fluid milk needs, while others do not.

11/ For purposes of presentation and emphasis, this example has been exaggerated.

12/ Lininger, F. F., Pennsylvania State College, Agricultural Experiment Station Bulletin No. 231, also based on unpublished data in the files of the Dairy Section.

A brief consideration of the types of distributors and processors operating within any particular milk shed will now be given in order to bring into the analysis the conditions which, taken in conjunction with those set forth in the two preceding paragraphs and in Part III of this paper, suffice to explain why milk suitable for consumption as fluid milk is brought to market, one part of which sells for one price, another part for another, etc., in short, the development of a system of class prices.

In almost any milk market (except as is the case in those small villages and towns where practically all of the milk is distributed by producers) where the economy of the market has developed to the point that distributors have become specialized, different degrees of specialization obtain between distributors. Some distributors sell only fluid milk and/or cream, others sell only fluid milk and/or cream and a relatively small volume of manufactured by-products (butter, cheese, ice cream, etc.) and still others sell some fluid milk and cream and sell a relatively large volume of manufactured dairy products. Within the same area, other processors produce and sell manufactured dairy products entirely. In other words, all degrees of enterprise combinations are to be found, ranging from the highly specialized fluid milk distributor to the relatively as highly specialized manufacturer of manufactured dairy products. The reason for such specialization is, obviously, that the economies in organization and operation gained through specialization are quite marked. This point needs no further proof than that evident to anyone who observes the present organization and operation of industry, both agricultural and non-agricultural.

Under the above conditions, it may appear that it is to the interest of all fluid milk distributors and all processors of manufactured dairy products within a particular area to pay producers in such a manner that evenness in production is encouraged rather than for specialized fluid milk distributors to do this alone. This is true to a certain extent. However, milk is bulky and perishable and the storage of milk is not economically feasible. On the other hand, manufactured dairy products can be and are stored for relatively long intervals. Thus, manufactured dairy products are produced in largest volume during the spring and summer months and are stored until they are moved into consumption. This tends to even out the seasonal variation in the prices of manufactured dairy products. Under these conditions the premium that could be paid producers of milk for use in manufactured dairy products to encourage evenness in supply would be equal to the cost of storage from the flush production period until the product moves into consumption and the savings realized in manufacturing costs when the volume of product

produced throughout the year is constant rather than varying. In addition, the supply areas of individual manufacturing plants are, in most cases, much smaller than the supply areas of individual fluid milk plants so that transportation costs do not affect farm prices seasonally to as great an extent as is the case with fluid milk. Also, there are, in many cases, few sanitation requirements with respect to the production, care and handling of milk produced for use in the production of manufactured dairy products; and, in those cases where there are sanitation requirements with respect to such milk, they are rarely, if ever, of such nature that farm production costs are increased markedly. Thus, sanitation requirements for milk produced for use in the production of manufactured products do not operate to increase the seasonal variation in the price of such milk to any appreciable degree, certainly, in any case, to a much lesser extent than in the case of milk produced for use as fluid milk. These considerations suffice to explain in a large measure why pricing systems pointed to encouraging evenness in production have not developed with respect to milk produced for use in the production of manufactured dairy products.

In view of the foregoing, it appears that there is a wide range in the incentive of different types of distributors to pay producers in a manner that encourages evenness in production. For specialized fluid milk distributors this incentive is quite strong and diminishes in strength in relation to the diminution in the degree of specialization of distributors until, in the case of manufacturers of manufactured dairy products, there is little incentive to purchase milk from producers for evenness so that evenness in production is encouraged. Under these conditions fluid milk distributors will compete with each other to secure the patronage of those producers who produce a rather constant volume of milk throughout the year so that these producers become associated with specialized fluid milk distributors. Further, producers who produce a more variable volume of milk will become associated with less specialized distributors. Stated in other terms, when producers are classified on the basis of their relative seasonality of production, they will tend to become directly associated with distributors in accordance with the relation between the relative constancy of production of different classes of producers and the relative strength of the incentive of different classes of distributors to secure an even volume of supply of the raw material. Thus, within a milk shed different producers will receive different prices for milk, such differences, after adjustments for location differences, being due to relative differences in the seasonal variation of production of different producers. Under these circumstances and providing economic forces have time to work out their full effects, producers who produce a relatively constant volume of milk throughout the year will receive

higher prices than those producers who produce a relatively more variable volume of milk throughout the year. Furthermore, the producers who produce a relatively constant volume of milk throughout the year will tend to be associated with highly specialized fluid milk distributors (highly specialized in the sense that the operating unit is engaged almost entirely in the distribution of fluid milk), while those who produce a relatively more variable quantity will be associated with distributors who are less highly specialized (in the sense noted above).

Heretofore, no seasonal variation in consumption of fluid milk has been assumed. The next step in the analysis is to examine how (1) various factors operate to establish retail prices for fluid milk at a practically uniform level throughout the year and, with small seasonal variation in demand, lead to the development of the seasonal excess, and (2) the manner in which the bargaining arrangements between producers and distributors affect the price structure for milk within a milk shed.

PART III

The Utilization of Milk in a Market as Influenced by the Nature of the Demand for Milk.

Heretofore the analysis has been developed on the assumption that there were no variations in the amount of milk sold as fluid milk in the market from day to day and season to season, hence, granting seasonal variation in production, it followed that, during the period of the year when production exceeded consumption, a portion of the milk produced for use as fluid milk in a particular area had to be diverted to uses other than fluid milk. This assumption is now dropped, and the analysis is focussed upon the determination of (1) whether there are variations in the volume of milk sold in the market from day to day and season to season, (2) the factors that account for such variations, if any, and (3) whether such variations are or normally may be expected to be of sufficient amplitude to keep the total volume of milk sold as fluid milk in the market equal to the volume of milk produced for use as fluid milk in the area supplying the market. A solution of the problems noted above is to be found largely in a consideration of the nature of the demand for fluid milk and the manner in which milk is distributed to consumers.

When considered in light of the usual supply and demand analysis of the factors affecting the price of any particular commodity, it might be expected that retail milk prices to consumers would be adjusted or changed from day to day and week to week as changes took place in the supply and demand situation. Stated differently, if, on a particular day of the week or during any particular week, milk supplies increased or decreased, it might be expected that retail milk prices (assuming no change in demand) would vary inversely to the changes in supplies, especially in view of the fact that milk is a highly perishable product and cannot be stored advantageously.

As far as actual supply and demand conditions are concerned, there are relatively large day to day variations in demand ^{13/} and relatively small day to day variations in supply. Under these circumstances, it might appear that there would be marked variation in the retail price of milk from day to day. However, it is probable that this pricing procedure would necessitate a type of market organization or mechanism whereby buyers and sellers would meet, or through which buyers' day to day demand schedules and sellers' day to day schedules of reservation prices would

^{13/} This point is developed in more detail later.

be made known and would operate to adjust prices in accordance with the day to day supply and demand situation. This type of market organization or mechanism would be somewhat analogous to the present produce exchanges. However, such procedure would be markedly different from the present procedure through which day to day retail prices not only of milk but of many other products are established.

Milk is generally distributed to consumers early in the morning, and numerous milk routes are necessary in order that customers be reached. A driver on a milk wagon cannot ascertain what the demand for milk will be on his route until he has completed deliveries. Thus, as a practical matter, it is impossible for him to adjust his prices in accordance with the demand situation as he finds it. The same considerations apply to the distributive enterprise as a whole. If the demand schedules of consumers on each milk route, and the aggregate demand schedules of consumers purchasing from each distributor and for the market as a whole, were known and accurately predictable from day to day, then the dealer could (in theory) quote prices each day on the basis of day to day changes in the day to day supply and demand situation. As a practical matter this procedure would be extremely unworkable. The highly technical nature of the analysis that would be necessary if such procedure were to be followed, the cost of such precise analysis (which would probably have to be detailed enough to allow the determination and forecasting of the demand schedules on many, if not all, milk routes), and the partially indeterminate nature of the results secured would preclude following the procedure outlined. The only practical procedure is for the distributor to quote prices for a longer period of time, rather than to quote prices daily. This is the procedure distributors actually follow and, under these circumstances, day to day variations in the demand for fluid milk (day to day variation in supplies ^{14/} are negligible) are manifest in variations in day to day purchases by consumers at a constant price, rather than being manifest in day to day variations in price.

It may appear, when weekly and monthly periods are considered, that retail prices would change in response to weekly and monthly changes in the supply and demand situation. However, retail prices remain constant for relatively long periods. (See Table 1.) The reasons for retail prices remaining constant for relatively long periods of time, rather than being reduced so that the seasonal increase in the volume of milk produced for use as fluid milk which takes place during the summer months in most milk market supply areas is moved into consumption as fluid milk, will now be examined. The explanation of practically constant retail prices of fluid milk is to be found mainly in the nature of consumer's response to changes in prices and, arising mainly therefrom, the sales and price policy followed by distributors.

^{14/} This is not to say that supplies do not change from day to day, since there is a trend in daily supplies that is seasonal in character. However, this trend is small when considered on a

Table 2. Number of periods during which retail price of milk remained unchanged for a year or more in principal milk markets.

Market	Period during which price remained unchanged				Period years covered	Percentage which the period dur- ing which price remained con- stant for a year or more is of total months in entire period
	13-24 months	25-36 months	37-48 months	Over 48 months		
New York	1	2		1	1909-31	46.4
Boston		1			1907-31	11.3
Philadelphia	1	2		1	1907-31	67.7
Chicago	1		1	2	1907-31	71.7
Baltimore	5	1		1	1909-33	61.3
Washington	4	1			1909-31	31.2
Minneapolis	4	1			1909-30	35.2
St. Paul	2	1			1914-31	28.2
St. Louis	1	1		1	1909-31	52.2
Atlanta	5		1		1907-31	40.3
Omaha	3				1909-31	22.1
Denver	2	1		1	1909-31	41.7
Los Angeles	5		1	1	1909-31	64.9

Based on data secured from reports of the Bureau of Labor Statistics, United States Department of Labor.

Statistical investigations have in general indicated that the demand for fluid milk by consumers is very inelastic; that is, that the change in the quantities of milk taken, following increases or decreases in price, is relatively very small. Two published studies ^{15/} for the Chicago and New York markets indicate that, during the period covered by the studies, when consumers recognized the necessity for changes in the retail price of milk, a one cent change in the retail price of milk per quart had a very slight immediate effect on sales and this effect was considerably diminished after five or six weeks.

Evidence relative to the influence of price changes upon milk sales has been obtained from an examination of the milk sales by distributors purchasing from cooperative associations in Baltimore, Maryland, Boston, Massachusetts, and the Twin Cities, Minnesota. In these cities the cooperative associations have a considerable share of the business of the market and changes in their sales are no doubt representative of the market as a whole. These data were analyzed by comparing the sales in the calendar month preceding the price change with the sales in the calendar month following the price change, ^{16/} after adjusting for the influence of the average seasonal variation in sales. Indexes of seasonal variation were calculated by the median-link-relative method, omitting the months in which price changes occurred. The compared months have been adjusted by dividing each by its corresponding seasonal index. The results of the analysis are given in Tables 2 to 4.

Examination of the data shows that usually a change in price results in an opposite but much smaller change in sales. In Boston, there were fifteen price changes (eight decreases and seven increases) during the period March 1922 to September 1931; in Baltimore there were only two changes, one decrease and one increase; and in the Twin Cities market there were seven decreases and three increases. Changes in sales in Boston were directly associated with changes in prices in four cases instead of being inversely associated as would be the case if other conditions remained the same. These four exceptions followed price changes occurring in July 1927, April 1928, July 1929 and August 1931; and there were four exceptions in the Twin Cities market in March 1926, November 1927, January 1931 and March 1932.

^{15/} Ross, H. A. The Marketing of Milk in the Chicago Dairy District. Ill. Agr. Exp. Sta. Bull. 269, pp. 503-510, 1925.
Ross, H. A. Some Factors Affecting the Demand for Milk and Cream in the Metropolitan Area of New York. U. S. Dept. of Agr. Tech. Bull. 73, pp. 44-47, 1928.

^{16/} In some cases prices changed each month for two or more consecutive months. In these cases, the sales in the calendar month preceding the price change were compared to the calendar month following the last month in the series of consecutive monthly price changes.

Table 3. Changes in sales of fluid milk following changes in retail prices, Baltimore, Maryland, September 1926 to May 1931, inclusive.

Month	Sales (30-day month basis) <u>1/</u>	Index of seasonal varia- tion <u>2/</u>	Seasonally adjusted sales <u>3/</u>	Retail prices per quart <u>4/</u>
	: 1,000 gallons :	: Percent :	: 1,000 gals :	: Cents :
September 1926	: 1,544 :	: 100.5 :	: 1,536 :	: 13 :
November 1926	: 1,510 :	: 101.0 :	: 1,495 :	: 14 :
Percent change	: :	: :	: -2.7 :	: +7.7 :
March 1931	: 1,431 :	: 100.2 :	: 1,428 :	: 14 :
May 1931	: 1,462 :	: 101.4 :	: 1,442 :	: 12 :
Percent change	: :	: :	: +1.0 :	: -14.3 :
Absolute aver- age percent change <u>5/</u>	: :	: :	: 1.8 :	: 11.0 :

1/ Table 18 Appendix.

2/ Table 17 Appendix.

3/ Computed from Columns 1 and 2.

4/ Table 19 Appendix.

5/ Represents average of percentage changes without regard to signs.

Table 4. Changes in sales of fluid milk following changes in retail prices, Boston, Massachusetts, March 1922 to September 1931.

Month	Sales (30-day month basis) <u>1/</u>	Index of seasonal variation <u>2/</u>	Seasonally adjusted sales <u>3/</u>	Retail prices, per quart <u>4/</u>
	Mill. lbs.	Percent	Mill. lbs.	Cents
March 1922	22.0	98.6	22.3	13.5
May 1922	22.8	99.5	22.9	12.5
Percent change			+2.7	- 7.4
June 1922	23.9	102.8	23.2	12.5
August 1922	22.9	103.1	22.2	13.5
Percent change			-4.3	+ 8.0
March 1923	23.0	98.6	23.3	14.5
May 1923	23.6	99.5	23.7	13.5
Percent change			+1.7	- 6.9
June 1923	25.6	102.8	24.9	13.5
September 1923	23.2	100.5	23.1	14.5
Percent change			-7.2	+ 7.4
October 1923	23.6	100.4	23.5	14.5
May 1924	25.2	99.5	25.3	12
Percent change			+7.7	-17.2
June 1924	26.2	102.8	25.5	12
October 1924	24.1	100.4	24.0	14.5
Percent change			-5.9	+20.8
February 1925	24.6	97.6	25.2	14.5
April 1925	25.2	97.2	25.9	13.5
Percent change			+2.8	- 6.9
April 1925	25.2	97.2	25.9	13.5
June 1925	28.0	102.8	27.2	13
Percent change			+5.0	- 3.7
June 1925	28.0	102.8	27.2	13
September 1925	25.7	100.5	25.6	14.5
Percent change			-5.9	+11.5

Table 4. (Continued)

Month	Sales (30-day month basis) <u>1/</u>	Index of seasonal variation <u>2/</u>	Seasonally adjusted sales <u>3/</u>	Retail prices, per quart <u>4/</u>
	Mill. lbs.	Percent	Mill. lbs.	Cents
October 1926	28.4	100.4	28.3	14.5
February 1927	27.8	97.6	28.5	14
Percent change			+0.7	- 3.4
June 1927	29.0	102.8	28.2	14
March 1928	29.5	98.6	29.9	15.5
Percent change			+6.0	+10.7
March 1928	29.5	98.6	29.9	15.5
May 1928	29.5	99.5	29.6	14.5
Percent change			-1.0	- 6.5
June 1928	29.9	102.8	29.1	14.5
September 1928	29.4	100.5	29.3	15.5
Percent change			+0.7	+ 6.9
November 1930	29.1	100.7	28.9	15.5
March 1931	30.2	98.6	30.6	12.5
Percent change			+5.9	-19.4
July 1931	31.6	106.8	29.6	12.5
September 1931	30.1	100.5	30.0	13.5
Percent change			+1.3	+ 8.0
Average percent- age change <u>5/</u>			-5.8	+11.9
Average percent- age change <u>6/</u>			+3.8	- 9.3
Absolute average percentage change <u>7/</u>			4.5	10.2

1/ Table 20 Appendix.

2/ Table 17 Appendix.

3/ Computed from 1/ and 2/.

4/ Table 21 Appendix.

5/ Represents average of percentage increases in price that were associated with percentage decreases in sales.

6/ Represents average of percentage decreases in price that were associated with percentage increases in sales.

7/ Represents average of percentage changes in price or in sales, without regard to signs, that were associated with opposite changes in sales or in price.

Table 5. Changes in sales of fluid milk following changes in retail prices, Twin Cities, Minnesota, March 1924 to August 1932.

Month and year	Sales : 30-day-month : basis <u>1/</u>	Index of : seasonal : variation <u>2/</u>	Seasonally : adjusted <u>3/</u> : sales <u>3/</u>	Retail : prices : per quart <u>4/</u>
	:Thousand pounds:	Percent	:Thousand pounds:	Cents
March, 1924	11,279	101.4	11,123	11.5
May, 1924	11,720	99.5	11,779	10
Percent change			+ 5.9	- 13.0
July, 1924	11,871	98.0	12,113	10
September, 1924	11,788	100.1	11,776	11
Percent change			- 2.8	+ 10.0
August, 1925	12,570	99.1	12,684	11
October, 1925	12,492	102.5	12,187	12
Percent change			- 3.9	+ 9.1
December, 1925	11,861	98.0	12,103	12
March, 1926	12,246	101.4	12,077	11
Percent change			- 0.2	- 8.3
August, 1927	12,111	99.1	12,221	11
November, 1927	12,608	101.7	12,397	12
Percent change			+ 1.4	+ 9.1
December, 1929	12,980	98.0	13,245	12
February, 1930	13,571	101.0	13,437	11
Percent change			+ 1.4	- 8.3
October, 1930	13,543	102.5	13,213	11
January, 1931	12,961	98.8	13,118	10
Percent change			- 0.7	- 9.1
November, 1931	12,724	101.7	12,511	10
January, 1932	12,203	98.8	12,351	9.5
Percent change			- 1.3	- 5.0
January, 1932	12,203	98.8	12,351	9.5
March, 1932	12,543	101.4	12,361	8.5
Percent change			+ 0.1	- 10.5
June, 1932	12,534	98.1	12,777	8.5
August, 1932	12,717	99.1	12,832	8
Percent change			+ 0.4	- 6.3
Average percentage:				
change <u>5/</u>			- 3.3	+ 9.6
Average percentage:				
change <u>6/</u>			+ 2.0	- 9.5
Absolute average				
percentage				
change <u>7/</u>			2.4	9.5

1/ Table 22, Appendix.

2/ Table 17, Appendix.

3/ Computed from columns 1 and 2.

4/ Table 23, Appendix.

5/ Represents average of percentage increases in price that were associated with percentage decreases in sales.

These unusual cases occur in periods when business conditions were changing rapidly and appear to be adequately explained by changes in these conditions.

Data contained in the reports of the Market Administrators for the various markets operating under Federal licenses also provide some indication of the consumer response to price changes in these markets. Only those markets where Class I milk was defined as whole milk, sold or distributed for consumption as whole milk, and where the size of the sales area has remained constant are considered. These data have been received for such a short period that it was impossible to compute a satisfactory index of seasonal variation and adjust sales for seasonal variation, except where other sales data from the same market were available for earlier periods.

The results of this latter study must be interpreted with some caution since there are other factors than price which influence sales. Sudden changes in temperature influence the volume of milk sold. There is a seasonal variation in total fluid sales, which is in part influenced by the vacation movement, and this in turn is affected by the prosperity of the community. Moreover, in a period of several months in recent years business conditions and consumer incomes have changed materially. These considerations limit somewhat the significance of the results of the study. It is important to note, however, that the results supplement the results obtained in the other studies, showing that changes in price are associated with changes in fluid milk sales, and that the changes in prices are relatively much greater than the changes in sales. The data are shown in Table 5 and indicate that an average change of 3.4 percent in sales is associated with an average opposite change of 12.3 percent in price.

It appears from the foregoing that the demand for milk is highly inelastic, especially when retail price changes are relatively small. When price changes are relatively large, it is probable that the change in consumption may be somewhat greater than when the changes in the retail price are relatively small, although the change in sales is probably less than directly proportional to the change in price, although the data that are available relative to this point are inconclusive. ^{17/} Stated differently, while the demand for milk is less inelastic when large, rather than small, price changes are considered, the coefficient of elasticity of demand still appears to be considerably less than unity.

^{17/} See also Ross, H. A., Some Factors Affecting the Demand for Milk and Cream in the Metropolitan Area of New York, Technical Bulletin No. 73, U. S. Department of Agriculture.

Table 6. Summary of changes in sales and in prices in specified cities.

Sales area and period	: Estimated average daily : : Class I sales : : Pounds :	: Retail delivery price, per quart : : Cents :
Boston:	:	:
April 1934 to September 1934	: 1,618,000	: 11
October 1934 to February 1935	: 1,592,000	: 12
Percentage change	: - 1.6	: + 9.1
March 1935 and April 1935	: 1,576,000	: 13
Percentage change	: - 1.0	: + 8.3
Detroit:	:	:
April 1934 to June 1934	: 1,221,000 ^{1/}	: 13
July 1934 to February 1935	: 1,167,000 ^{1/}	: 11
Percentage change	: - 4.4	: +10.0
March 1935	: 1,153,000 ^{1/}	: 12
Percentage change	: - 1.2	: + 9.1
Evansville:	:	:
May 1934 to September 1934	: 43,764	: 9
October 1934 to March 1935	: 41,635	: 9.5
Percentage change	: - 4.9	: + 5.6
Grand Rapids:	:	:
August 1934 and September 1934	: 127,123	: 9
October 1934 to March 1934	: 127,208	: 10
Percentage change	: 0.0	: +11.1
Kalamazoo:	:	:
July 1934 to November 1934	: 36,733	: 10
December 1934 to February 1935	: 40,720	: 8
Percentage change	: +10.9	: -20.0
March 1935	: 39,397	: 10
Percentage change	: - 3.2	: +25.0
Absolute average percentage change ^{2/}	: 5.4	: 12.3

Tables 24 to 28, inclusive, Appendix.

^{1/} Adjusted for seasonal variation.

^{2/} Represents average of percentage changes without regard to signs.

On the basis of the foregoing, it appears that it would require a very marked decrease in price in order that any appreciable seasonal increase in the volume of milk produced for use as fluid milk be moved into consumption as fluid milk in the market as a whole. It is rather generally recognized that changes in the prices received by producers that are associated with changes in retail prices are relatively greater than the changes in retail prices. This is due to the fact that some of the more important elements in the gross margin between the price received by producers and the price at which the milk is sold at retail (transportation costs, country station charges and the like) do not change with changes in volume; in other words, they are fixed charges per unit. This being the case, the seasonal variation in prices received by producers would be relatively greater than the seasonal variation in retail prices, which, as was pointed out before, would have to be quite marked in order that any appreciable seasonal increase in the production of milk produced for use as fluid milk within the supply area be consumed as fluid milk. Over a period of time, the market seasonal variation in prices received by producers would tend to be reduced, since producers would change the seasonality of their production in order to sell a larger volume of milk at the time of year when prices were seasonally high, and would reduce their sales during the period when prices were seasonally low. However, it would be greatly to the advantage of some producers to change the seasonality of their production and little, if any, to others, depending upon the type of farm organization and operation followed by each. Thus, given time for economic forces to work out their full effects, the seasonal variation in supplies and prices received by producers, and consequently the seasonal variation in retail prices, would be much less marked than would appear to be the case at first.

The second limitation to lowering prices on the basis of the seasonal increase in the volume of milk produced for use as fluid milk by any dealer is that, in order to hold the new customers later when supplies in the market are short, dealers would have to develop new sources of supply during the short season in order to have sufficient milk to meet the requirements of their larger business. These new sources involve an expense in development (see Part II, Section G) and may also have an equal or greater seasonal variation in production the following year. The alternative is to raise prices when supplies are short and thereby reduce the customer's takings or to fail to serve the added customer. Either of these latter procedures is sure to lead to dissatisfaction.

The foregoing facts and considerations suffice to explain in large part why retail prices of fluid milk tend to remain practically constant on a seasonal basis. Thus, instead of retail prices showing marked seasonal variation of such magnitude that the seasonal changes in volume of milk produced for use as fluid milk be moved into consumption as fluid milk, retail prices remain practically constant seasonally and seasonal changes in demand are reflected in greater or less takings of fluid milk, as the case may be, at the ruling level of prices. Such seasonal variations in demand are generally quite small, and are much less than the seasonal variation in the volume of milk produced for use as fluid milk that obtains in most milk market supply areas. (See Table 17, Appendix.) ^{18/} Thus, unless the volume of milk produced for use as fluid milk is equal to fluid milk requirements on a seasonal basis, the seasonal increase in the volume of milk produced for use as fluid milk is diverted to uses other than fluid milk. Stated differently, the seasonal increase in the volume of milk produced for use as fluid milk becomes a seasonal excess over fluid milk requirements. In the next part of the analysis of the price structure for milk within a milk shed, an explanation of the development of class prices, or the classified price plan of payment for milk by distributors, will be set forth.

^{18/} See also Ross, H. A., The Marketing of Milk in the Chicago Dairy District, Ill. Agr. Exp. Sta. Bull. No. 269, and Ross, H. A., Some Factors Affecting the Demand for Milk and Cream in the Metropolitan Area of New York, U. S. Dept. of Agr. Tech. Bull. No. 73.

Part IV

The Price Structure for Milk within a Milk Shed - The Development of Class Prices.

The analysis of the price structure for milk within a milk shed will now be focussed upon the manner in which class prices or, stated more precisely, the classified price plan of selling milk to distributors, develops in a milk market. At this point it is important to set forth as clearly as is possible in a short paper^{19/} the difference between the classified price plan and the rating plan. The classified price plan is a method of selling milk to distributors, while the rating plan is a method of prorating to producers the proceeds of sales to distributors. The classified price plan does not necessarily need to be complemented by the operation of a rating plan, and classified price plans are often used where no rating plan is in operation. On the other hand, the rating plan under certain forms of administration becomes in effect a classified price plan and a plan for prorating to producers the proceeds of sales to distributors. For example, in some markets, producers associations bargain for "base" and "surplus" prices; "bases" are established for individual producers for which "base" milk producers receive "basic" prices. Producers are shifted among distributors in such fashion that the total bases of producers delivering milk to any particular distributor are approximately equal to such distributor's sales of fluid milk. However, pricing milk to distributors in accordance with a classified price plan is usually more precise than that just noted, with a more strict accounting and pricing of milk according to use, and is not necessarily operated in conjunction with a base-rating plan.

For the purposes of this paper, the classified price plan is defined as a method of selling and pricing milk to distributors in accordance with the use made thereof, while the base-rating plan is defined as a method of prorating to producers the proceeds of sales to distributors.

It has already been demonstrated (see Part II) that, assuming little seasonal variation in the demand for milk, certain supply characteristics operate so that, given differences in individual producers' seasonal output curves, and providing that economic forces have time to work out their full effects, producers who produce a relatively constant volume of milk throughout the year will receive higher prices, other factors accounted for, than producers who produce a relatively more variable volume of milk throughout the year. Furthermore, the producers who produce a relatively constant volume of milk throughout the year will tend to become associated with highly specialized fluid milk distributors (highly specialized in the sense that the operating unit is engaged almost entirely in the distribution of fluid milk, while those who produce a relatively more variable quantity throughout the year will tend to

^{19/} Often called base-surplus, base-rating, and the like.

become associated with distributors who are less highly specialized (in the sense noted above). The assumption that there is little seasonal variation in the demand for milk was then examined, (Part III) and it was found that certain factors operate so that there is marked seasonal uniformity in retail fluid milk prices, and seasonal changes in demand, which are very small in most cases, are reflected in slight seasonal changes in the quantities of fluid milk consumed at practically constant prices, rather than seasonal changes in the quantities of milk consumed that are associated with seasonal changes in retail fluid milk prices. It is in the analysis of the seasonal behavior of retail fluid milk prices, and the effects such behavior would tend to have upon the prices received by producers, that the reasons for the development of the seasonal excess were ascertained.

Once the development of the seasonal excess has been demonstrated, the basis for the effort on the part of specialized fluid milk distributors to secure a uniform volume of milk throughout the year becomes apparent. Under these circumstances, the argument that specialized fluid milk distributors tend to secure milk to meet the needs of their fluid milk trade, which are practically constant seasonally, from producers who produce a relatively uniform volume of milk throughout the year, such producers receiving higher prices, other factors accounted for, than producers who produce a relatively more variable volume of milk throughout the year and, consequently, tend to become associated with less highly specialized distributors, applies with especial force.

It should be noted that it is not contended that distributors select producers who produce a relatively uniform volume of milk throughout the year at random throughout the milk shed. It is rather well recognized that, generally speaking, producers within a particular type of farming area have markedly similar seasonal output curves. Thus, a distributor who wishes to secure a uniform supply of milk throughout the year can usually operate in an area or areas where a fairly large supply of such milk is available.

The situation treated above with respect to the procurement of milk by distributors is strikingly similar to the situation that obtains when distributors purchase their milk in accordance with the provisions of a formal classified price plan. In the former situation, there is a close approximation to the purchase of milk on a classified price basis, considering the market as a whole, due to the fact that those distribution units which are highly specialized, i.e., which distribute by far the larger portion of the milk they secure as fluid milk, tend to pay higher prices for milk than distribution units which are less highly specialized, i.e., which utilize relatively more of the milk they secure as manufacturing milk. The difference between this method of purchasing milk and a formal classified price method of purchasing is merely one of the degree and precision with which milk is classified in accordance with the use made thereof.

Producers' cooperative associations have recognized the principles noted above in bargaining with distributors and have developed the system of formal class prices whereby milk is priced by cooperatives to distributors in accordance with the form in which milk is sold by distributors. Thus, a formal system of class prices, intended to secure the same result, is substituted for the rather informal system of class prices discussed above. The distributor with the larger use of milk in fluid sales pays a higher average price than the one with a considerable utilization in manufactured products. The system of formal class prices has the advantage for the producers' cooperative association of simplifying the bargaining arrangements, since it automatically establishes the basis of payment for the different dealers once the general terms for the market are determined. Without class prices, individual bargains would be necessary with each dealer in order to insure producers the full value of their particular milk, and the association would be exposed to the criticism of over- or under-pricing the milk of particular producers and over- or undercharging particular distributors. Class prices dispose of this necessity for individual bargains and result in payments corresponding to the prices which would have been arrived at under proper individual bargaining.

In addition to the seasonal factors treated above which lead to the development of a classified price plan of selling milk to distributors, there are certain types of organization of supply that would lead to the development of a formal class price system, even though the volume of milk produced throughout the year and the volume of milk consumed in the market throughout the year were precisely correlated, except for daily variations in demand and supply. In such cases, the reason for the development of a classified price plan is to be found in the fact that there must be brought to market a volume of milk in excess of daily average sales, such excess volume being needed to meet daily variations in sales.

It is rather well recognized that there are significant variations in the amount of milk sold from day to day in a fluid milk market, such variations being attributable to such factors as (1) consumption and working habits of the people which tend to show a regular day of the week variation, (2) holidays, and (3) changes in temperature.

Consumption and working habits of the people are such as to cause a rather regular day of the week variation in the sales of various products. Most business concerns, for example, do not operate on Sunday and many also close operations on Saturday afternoons. The Sunday dinner is frequently a heavier and more elaborate meal than that served on week days. These factors affect wholesale and retail sales of the various products differently. Wholesale sales of milk and cream are ordinarily low on Sunday, with sales to restaurants and cafeterias also low on Saturday. Sales of cream to stores are usually large on Saturday, Friday and Monday. Route sales of milk and cream are heavier on Sunday.

Examples of the variation in the average sales on various days of the week for several markets are given in tables 6 to 10, inclusive. In general, the greatest variation is found in cream sales, the range for the New York market for all cream being from 84.7 percent of the average daily sales for the week on Sunday to 127.9 percent on Saturday. For all milk in the same market the range was from 90.2 percent of the average daily sales for the week on Sunday to 102.8 percent on Friday. ^{20/} Examination of the tables indicates a greater variation in wholesale sales of fluid milk than of the retail sales, but in the case of cream the reverse may be the case. These variations differ in the various sections of a large city depending largely upon the economic status of the consumers and the number of persons who lunch away from home during the day. ^{21/} Since dealers have varying proportions of retail and wholesale business and serve different sections of the population, they are unlikely to have variations in sales corresponding to those in the market as a whole. Some dealers will have larger variations in sales and others smaller variations. The difference in the character of the business of dealers and the consequent differences of sales by day of the week, even for the same type of products, are shown in tables 11 to 14, inclusive. These tables show the variation in the sales of Milwaukee, Wisconsin, dealers during the week of April 22 to 28, 1934. The daily sales of each dealer have been shown as a percentage of his own average daily sales for the week. This variation in sales among dealers means that the excess milk above the average daily sales of the market is higher than would be the case if dealers had available some method of integrating their individual fluctuations in sales with other dealers having different fluctuations, through a shifting of milk between them.

^{20/} Ross, H. A., Some Factors Affecting the Demand for Milk and Cream in the Metropolitan Area of New York, United States Department of Agriculture - Technical Bulletin 73, 1928.

^{21/} Ibid, p. 32.

Table 7. Daily fluctuation in sales of milk and cream in the New York Metropolitan Area, 1924.

Type of sale	Percentage of average daily sales for the week					
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
	Percent	Percent	Percent	Percent	Percent	Percent
Retail sales of milk						
Qts., Grade B	103.7	99.5	99.6	99.8	99.2	98.9
Qts., Grade A	100.5	100.0	100.2	100.3	99.8	99.4
Qts., Certified	98.9	100.9	99.8	100.6	100.6	98.9
Qts., Buttermilk	76.4	106.9	106.5	106.3	102.9	94.5
Pts., Grade B	77.6	106.8	106.9	108.0	108.0	85.5
1/2 Pts., Condensed	106.0	96.9	99.0	105.8	93.8	103.8
Retail sales of cream						
1/2 Pts., Light	108.0	98.0	99.7	103.5	97.8	96.4
1/2 pts. Extra Heavy	176.3	83.4	88.8	92.3	86.2	90.9
Wholesale sales of milk						
Qts., Grade B	92.8	99.4	100.8	99.6	100.8	104.4
Pts., Grade B	46.8	115.2	116.8	115.7	118.4	71.2
Bulk, Grade B	73.5	107.3	103.1	104.2	104.3	100.4
Condensed Milk	42.7	114.5	86.9	93.4	83.6	148.3
Buttermilk	34.4	126.5	106.0	109.2	114.4	94.5
Wholesale sales of cream						
Light	42.3	118.9	95.6	93.7	94.9	132.8
Extra Heavy	72.9	107.7	88.9	91.4	86.6	140.3

Compiled from "Some Factors Affecting the Demand for Milk and Cream in the Metropolitan Area of New York," by H. A. Ross, United States Department of Agriculture, Technical Bulletin No. 73, June 1928.

Table 8. Daily fluctuation in retail, wholesale and total sales of fluid milk and cream in Reading, Pennsylvania.

Type of sale	Percentage of average daily sales for the week						
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Milk:							
Retail	107.49	95.18	98.62	98.54	99.01	99.18	101.97
Wholesale	61.36	106.27	102.46	102.86	104.50	115.20	107.35
Total	91.90	98.93	99.92	100.00	100.86	104.60	103.79
Cream:							
Retail	136.07	87.18	99.62	96.63	87.51	85.99	107.01
Wholesale	77.21	102.33	96.32	111.62	105.01	95.83	111.67
Total	112.91	93.14	98.32	102.53	94.40	89.87	108.84

Compiled from "Distribution and Consumption of Milk in Reading, Pennsylvania," by T. K. Cowden, Pennsylvania Agricultural Experimental Station, Technical Bulletin 614, November 8, 1933.

Table 9. Daily fluctuation ^{1/} in sales of certain dairy products
in Chicago and suburbs.

Type of sale	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Milk, Quarts	104.7	97.2	99.9	99.3	100.4	100.4	100.0
Milk, Pints	64.3	100.8	104.2	104.9	104.4	105.2	81.3
22% Cream, 1 1/2 Pints	153.7	93.7	100.7	99.3	103.1	97.6	99.3
32% Cream, 1 1/2 Pints	311.9	76.4	88.1	96.3	107.3	93.0	115.3

Compiled from "The Marketing of Milk in the Chicago Dairy District," Illinois Agricultural Experiment Station Bulletin No. 269.

^{1/} Based on average retail sales to more than 200,000 families during the three-year period 1920-1922. Average sales for the five days Tuesday, Wednesday, Thursday, Friday and Saturday = 100 percent.

Table 10. Daily fluctuation in sales and receipts of milk and cream for the Pittsburgh market, during the last two weeks of July, 1933. 1/

Type of sale	Percentage of average daily sales for the week						
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Regular fluid milk	76.25	105.16	102.56	100.69	102.01	109.44	103.90
Special fluid milk	95.09	97.74	103.66	97.06	105.17	96.31	104.96
Total fluid milk	76.67	104.99	102.58	100.61	102.08	109.15	103.92
Fluid Cream	92.36	92.41	100.60	93.22	105.57	99.82	116.02
Dealer purchases of milk and cream	98.35	97.25	100.21	102.83	101.31	98.55	101.48

Compiled from "The Distribution and Consumption of Milk in Allegheny County, Pennsylvania," by T. K. Cowden, and C. G. Gifford, Pennsylvania Agricultural Experiment Station Technical Paper 641, March 13, 1934.

1/ Based on reports received from 35 dealers handling 77 percent of the fluid milk sales in the market.

Table 11. Daily fluctuation in the sales of milk and cream in Williamsport, Pennsylvania, March, April and May 1933.

Type of sale	Percentage of average daily sales for the week						
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
<u>Milk</u>							
Retail	102.35	97.81	99.99	100.04	99.71	99.69	100.40
Wholesale	65.86	104.23	102.25	105.63	105.70	111.06	105.25
Total	94.94	99.17	100.80	101.15	100.76	102.97	101.09
<u>Cream</u>							
Retail	138.75	87.51	97.81	96.18	90.10	88.15	101.52
Wholesale	88.92	95.35	93.73	102.59	93.77	106.94	118.20
Total	111.75	93.14	95.16	98.23	92.46	99.07	110.19

Compiled from "Distribution and Consumption of Milk in Williamsport, Pennsylvania," by T. K. Cowden, Pennsylvania Agricultural Experiment Station Technical Paper No. 615, November 8, 1933.

Holidays also exert a considerable influence upon milk and cream sales, since these are occasions for special activities. On certain of these days, notably during the summer, there is a considerable movement of people out of the city, while other holidays are feast days. In general, milk consumption appears to be somewhat decreased on holidays except for increases at Thanksgiving and Christmas. Sales of extra heavy cream at Christmas and Thanksgiving increase by over eighty percent. Data for the New York market are given in Table 15.

Temperature is also an important factor in short-time variations in the demand for milk. In general, an increase in temperature is associated with an increase in demand, and a decrease in temperature is associated with a decrease in demand. In the New York market it was found that temperature changes in winter are more marked than in summer but that a change of a given number of degrees produced about three times as great a change in summer as a similar change in the winter. ^{22/}

On the basis of the foregoing, it appears that a considerable volume of milk in excess of average daily sales must be brought to market in order to have a supply sufficient to cover daily variations in the demand for milk. Few data are available relative to the necessary size of this daily excess, hereinafter termed the operating reserve, but it appears to range from ten to twenty percent of average daily sales at least, and perhaps higher in some markets.

If the producers in the market so organize their service of supply to the distributors so as to remove from them entirely or even partly the necessity of carrying this "operating reserve", producers can secure a higher price for the delivered milk since the distributor has always available all the milk he needs for his fluid milk trade and is also relieved of the necessity of procuring his milk from a large number of individual producers and is under no necessity of taking milk, a portion of which must be disposed of in channels other than fluid milk. This is one of the services which operating producers' cooperative associations commonly provide distributors purchasing from them. They are thus able to sell distributors milk at a higher price than they are able to secure when distributors are not so serviced. There would thus arise what amounts to a class price for milk, distributors paying a certain price for the milk called for from the association and used for fluid purposes, with the association utilizing the remaining milk in the most profitable possible manner but incurring yielding somewhat lower returns than the fluid sales. The difference between the prices charged distributors for

^{22/} Ross, H. A., Some Factors Affecting the Demand for Milk and Cream in the Metropolitan Area of New York, United States Department of Agriculture Technical Bulletin No. 73, pp. 39-44.

Table 12. Daily fluctuation in wholesale sale of
pints of regular milk, Milwaukee, April
21-28, 1934.

Company:	Percentage of average daily sales for the week						
	Sunday	Monday	Tuesday	Wed.	Thurs.	Friday	Saturday
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
H	103.0	113.2	123.5	72.1	154.4	72.1	154.4
I	110.3	133.6	135.2	139.4	140.4	131.7	8.7
M	7.8	134.4	127.7	128.2	131.0	137.3	33.6
R	73.3	115.1	95.5	102.1	109.9	124.3	79.8
S	25.9	129.6	51.9	25.9	181.5	125.6	129.6
D	2.1	85.6	139.1	152.0	128.5	128.5	64.2
K	59.1	106.8	88.6	70.5	213.6	75.0	86.4
O	35.7	173.5	103.8	120.8	109.8	112.0	82.4
T							
U	0.0	113.3	116.7	116.7	116.7	116.7	116.7
A	215.5	90.0	81.5	78.6	82.8	79.9	71.7
C	37.7	121.2	101.6	146.8	90.3	112.9	56.5
V	65.8	103.5	106.1	112.9	116.9	96.7	98.1
B	15.6	132.4	131.7	133.8	123.8	122.8	39.9
E	0.0	197.1	156.3	149.5	156.3	13.6	27.2
F	0.0	0.0	0.0	700.0	0.0	0.0	0.0
L	61.8	102.9	128.7	113.2	139.0	72.0	82.4
P							
Q							
Y	100.0	0.0	0.0	200.0	0.0	200.0	200.0
Weighted:							
average:							
for all:	69.6	119.1	115.6	116.5	117.6	112.6	49.0
dealers:							

Compiled from unpublished data secured during the Milwaukee Milk Survey conducted by the Federal Emergency Relief Administration, and Wisconsin Emergency Relief Administration under the direction of the Agricultural Adjustment Administration.

Table 13. Daily fluctuation in retail sales of
quarts of regular milk, Milwaukee,
April 22-28, 1934

Company	Percentage of average daily sales for the week						
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
H	91.9	96.2	103.0	98.6	103.6	102.9	103.8
I	99.6	97.6	100.2	100.2	100.7	100.8	100.9
M	100.2	96.2	99.0	100.1	100.9	99.7	103.9
R	102.2	96.5	101.7	98.8	100.8	98.0	102.0
S	99.3	97.4	102.2	98.3	99.7	98.7	104.4
D	96.4	101.1	95.8	102.8	102.7	97.8	103.4
J	100.1	103.3	98.9	98.5	92.7	99.2	107.3
K	99.3	97.4	100.8	100.0	100.2	100.3	102.0
U	98.7	99.6	100.5	99.9	99.1	100.2	102.0
A	100.7	97.3	98.1	100.0	101.1	99.2	103.6
C	97.3	103.4	99.7	95.4	104.1	98.9	101.2
V	99.4	96.9	101.8	101.3	102.8	99.2	98.6
B	99.8	98.1	97.8	101.0	101.9	97.6	103.8
E	96.3	100.7	95.1	103.6	102.7	96.3	105.3
F	95.3	102.4	95.5	102.9	101.4	98.6	103.9
G	95.1	99.0	100.4	99.2	101.2	100.1	105.0
L	97.9	96.3	99.4	103.5	103.7	98.8	100.4
P	99.0	98.5	99.3	100.5	100.1	101.0	101.6
Q	98.9	98.9	99.3	96.5	103.9	99.9	102.6
Y	99.0	100.8	97.4	99.8	100.0	100.8	102.2
Weighted average for all dealers	99.7	97.9	98.4	100.4	101.3	99.0	103.3

Compiled from unpublished data secured during the Milwaukee Milk Survey conducted by the Federal Emergency Relief Administration and the Wisconsin Emergency Relief Administration under the direction of the Agricultural Adjustment Administration.

Table 14. Daily fluctuation in wholesale sales of
quarts of 18% cream, Milwaukee, April 22-
28, 1934

Company	Percentage of average daily sales for the week						
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
H	33.9	89.7	80.7	107.7	116.7	98.7	170.6
I	78.4	106.4	95.2	89.6	95.2	117.6	117.6
M	80.6	115.1	96.7	71.4	87.5	78.3	170.4
R	100.0	76.5	100.0	70.6	129.4	94.1	129.4
S	116.7	53.3	116.7	58.2	116.7	116.7	116.7
D	0.0	0.0	0.0	0.0	700.0	0.0	0.0
J	33.3	166.7	66.7	100.0	100.0	200.0	33.3
K	83.1	99.0	87.9	95.8	97.4	111.7	125.1
O	9.5	131.8	113.0	116.1	103.6	119.3	106.7
T							
U	53.8	107.7	107.7	107.7	107.7	107.7	107.7
A	97.6	91.0	101.6	88.3	101.6	90.7	129.2
C	65.1	114.0	146.4	97.7	97.7	65.1	114.0
V	75.4	88.2	53.8	96.9	96.9	118.5	172.3
B	72.6	103.6	94.7	108.9	95.8	101.8	122.6
E	89.1	50.9	127.3	101.8	101.8	76.4	152.7
F	116.7	58.3	116.7	116.7	0.0	58.3	233.3
G	94.2	67.4	114.4	107.7	107.7	94.2	114.4
L	311.1	0.0	77.8	0.0	77.8	155.5	77.8
P	41.2	41.2	41.2	123.5	41.2	82.4	329.3
Q	0.0	0.0	0.0	0.0	0.0	700.0	0.0
Y	140.0	93.3	93.3	93.3	186.8	0.0	93.3
Weighted							
Average	77.0	99.9	95.9	97.7	98.8	101.5	129.2
all deal- ers							

Compiled from unpublished data secured during the Milwaukee Milk Survey conducted by the Federal Emergency Relief Administration and the Wisconsin Emergency Relief Administration under the direction of the Agricultural Adjustment Administration.

Table 15. Daily fluctuation in retail sales of half pints of 18% cream, Milwaukee, April 22-28, 1934

Company	Percentage of average daily sales for the week						
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
H	119.5	85.4	97.4	119.5	78.5	100.7	99.0
M	152.0	74.7	92.8	93.1	90.7	89.6	107.1
R	206.1	76.4	84.0	81.5	89.1	76.4	86.5
S	301.3	35.4	53.2	57.6	79.7	66.5	106.3
D $\frac{1}{2}$	211.7	78.4	96.3	0.0	88.0	101.8	123.8
K $\frac{2}{2}$	165.6	82.8	90.3	94.1	86.6	82.8	97.8
E	164.0	84.0	89.3	97.3	73.4	84.0	108.0
G	95.5	190.8	0.0	79.5	143.2	95.5	95.5
Weighted average of all dealers	159.9	76.5	91.3	88.0	88.6	89.3	106.4

Compiled from unpublished data secured during the Milwaukee Milk Survey conducted by the Federal Emergency Relief Administration and the Wisconsin Emergency Relief Administration under the direction of the Agricultural Adjustment Administration.

1/ 19%

2/ 18 $\frac{1}{2}$ %

Table 16. Effect of holidays on sales of retail milk and cream in the New York Metropolitan Area - 1924.

Product	Change in sales <u>L/</u>											
	New Year's Day	Lincoln's Birth-day	Washington's Birth-day	Easter	Pass-over week	Memorial Day	Fourth of July	Labor Day	Yom Kippur	Thanks-giving	Christmas	
Quarts - Grade B	<u>Per-cent</u> : - 1.4	<u>Per-cent</u> : + 1.2	<u>Per-cent</u> : - .6	<u>Per-cent</u> : 0	<u>Per-cent</u> : - 1.5	<u>Per-cent</u> : - 1.2	<u>Per-cent</u> : - 2.4	<u>Per-cent</u> : - 6.0	<u>Per-cent</u> : 0	<u>Per-cent</u> : + .6	<u>Per-cent</u> : + 3.0	
Quarts - Grade A	<u>Per-cent</u> : 0	<u>Per-cent</u> : - 1.2	<u>Per-cent</u> : - .6	<u>Per-cent</u> : - .6	<u>Per-cent</u> : - 1.4	<u>Per-cent</u> : - 1.2	<u>Per-cent</u> : - 2.4	<u>Per-cent</u> : - 4.8	<u>Per-cent</u> : 0	<u>Per-cent</u> : + .6	<u>Per-cent</u> : + 1.2	
Quarts -Certified	<u>Per-cent</u> : - 3.0	<u>Per-cent</u> : - 1.8	<u>Per-cent</u> : - 2.9	<u>Per-cent</u> : .0	<u>Per-cent</u> : - 1.8	<u>Per-cent</u> : - 1.2	<u>Per-cent</u> : - 1.8	<u>Per-cent</u> : - 6.5	<u>Per-cent</u> : - .6	<u>Per-cent</u> : - 1.2	<u>Per-cent</u> : - 1.8	
Pints - Grade B	<u>Per-cent</u> : -24.0	<u>Per-cent</u> : -1.4	<u>Per-cent</u> : -20.7	<u>Per-cent</u> : +1.6	<u>Per-cent</u> : - 2.6	<u>Per-cent</u> : -26.5	<u>Per-cent</u> : -28.3	<u>Per-cent</u> : -29.8	<u>Per-cent</u> : -5.5	<u>Per-cent</u> : -25.1	<u>Per-cent</u> : -26.1	
Extra heavy cream	<u>Per-cent</u> : +44.0	<u>Per-cent</u> : + 2.1	<u>Per-cent</u> : +11.1	<u>Per-cent</u> : +2.8	<u>Per-cent</u> : .6	<u>Per-cent</u> : +23.3	<u>Per-cent</u> : +27.8	<u>Per-cent</u> : -7.8	<u>Per-cent</u> : -1.9	<u>Per-cent</u> : +83.4	<u>Per-cent</u> : +83.7	

Compiled from "Some Factors Affecting the Demand for Milk and Cream in the Metropolitan Area of New York," United States Department of Agriculture, Technical Bulletin No. 73 - June, 1928.

L/ Percentage change from the average corrected sales for the three days preceding and the three days following the holiday.

milk that is sold by them as fluid milk and the price the association receives for milk in other uses is, other factors being the same, the premium distributors are willing to pay for milk when such milk is furnished them in conformance with their daily needs.

Although there may be other factors that, in a particular market, also contribute to the development of a system of class prices, the foregoing treatment suffices to explain the more important considerations obtaining that, taken as a whole, lead to the development of class prices in most important milk markets.

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A P P E N D I X

Table 17. Index numbers of seasonal variation in fluid milk sales by distributors purchasing from cooperative associations.

	Baltimore	Boston	Twin Cities
	Percent	Percent	Percent
January	97.7	96.9	98.8
February	98.6	97.6	101.0
March	100.2	98.6	101.4
April	100.4	97.2	101.8
May	103.1	99.5	99.5
June	101.4	102.8	98.1
July	99.0	106.8	98.0
August	96.4	103.1	99.1
September	100.5	100.5	100.1
October	103.0	100.4	102.5
November	101.0	100.7	101.7
December	98.7	95.9	98.0
Average	100.0	100.0	100.0

Index numbers were calculated by the median-link-relative method from data of fluid milk sales, omitting those months in which price changes occurred. For basic data used in computing the index for Baltimore see tables 17 and 18; for Boston, see tables 19 and 20; and for Twin Cities, see tables 21 and 22.

Table 18. Fluid milk sales of Maryland State Dairymen's Association, December 1923-December 1931.

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	000	000	000	000	000	000	000	000	000	000	000	000	000
	gallons	gallons	gallons	gallons	gallons	gallons	gallons	gallons	gallons	gallons	gallons	gallons	gallons
1923													
1924	1,171	1,207	1,230	1,237	1,262	1,254	1,262	1,287	1,313	1,367	1,368	1,348	1,275
1925	1,347	1,338	1,428	1,445	1,489	1,552	1,491	1,439	1,525	1,578	1,508	1,490	1,468
1926	1,476	1,489	1,517	1,530	1,592	1,570	1,539	1,490	1,544	1,582	1,510	1,481	1,525
1927	1,480	1,512	1,549	1,536	1,562	1,558	1,538	1,485	1,554	1,598	1,562	1,558	1,541
1928	1,527	1,549	1,571	1,549	1,596	1,562	1,517	1,481	1,506	1,575	1,555	1,514	1,542
1929	1,517	1,526	1,547	1,551	1,673	1,566	1,528	1,495	1,571	1,575	1,555	1,510	1,551
1930	1,497	1,507	1,543	1,534	1,592	1,561	1,517	1,493	1,587	1,469	1,509	1,465	1,523
1931	1,434	1,450	1,431	1,470	1,491	1,462	1,435	1,407	1,468	1,457	1,414	1,376	1,441

Compiled from "History of Maryland State Dairymen's Association," Appendix Table VI.

1/ Adjusted to 30 day month.

Table 19. Retail prices of milk per quart delivered in Baltimore, 1924-1931

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
1924	13	13	13	13	13	13	13	13	13	13	13	13	13
1925	13	13	13	13	13	13	13	13	13	13	13	13	13
1926	13	13	13	13	13	13	13	13	13	14	14	14	13
1927	14	14	14	14	14	14	14	14	14	14	14	14	14
1928	14	14	14	14	14	14	14	14	14	14	14	14	14
1929	14	14	14	14	14	14	14	14	14	14	14	14	14
1930	14	14	14	14	14	14	14	14	14	14	14	14	14
1931	14	14	14	13	12	12	12	12	12	12	12	12	12

Compiled from reports of the United States Department of Labor, Bureau of Labor Statistics.

Table 20. Monthly fluid milk sales^{1/} by large dealers in Boston, 1922-1931.

Year:	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1922:	21.4	21.7	22.0	21.5	22.3	23.9	23.4	22.9	22.6	22.5	22.7	21.3	22.4
1923:	22.0	22.4	23.0	22.6	23.6	25.6	24.5	23.7	23.2	23.6	23.5	22.6	23.4
1924:	22.9	23.1	24.1	24.5	25.2	26.2	27.2	26.1	24.6	24.1	24.4	23.8	24.7
1925:	24.2	24.6	25.2	25.2	25.5	28.0	27.2	26.3	25.7	25.8	26.1	25.4	25.8
1926:	25.9	26.1	26.5	26.5	27.0	27.6	28.9	27.5	27.2	28.4	28.4	26.6	27.2
1927:	27.2	27.3	28.6	28.4	27.9	29.0	29.8	28.2	28.2	28.7	28.1	27.8	28.3
1928:	28.7	29.0	29.5	29.3	29.5	29.9	31.3	31.4	29.4	30.6	31.1	29.8	29.9
1929:	30.5	30.8	31.5	31.0	32.0	32.8	32.8	31.7	31.0	30.4	30.7	29.1	31.2
1930:	29.6	30.0	30.4	30.2	31.2	31.4	30.5	29.7	30.6	29.7	29.1	28.2	30.1
1931:	30.0	29.6	30.2	29.9	31.8	30.2	31.6	30.6	30.1	30.3	29.7	28.5	30.2

1/ Adjusted to thirty-day month.

Data supplied by W. H. Bronson of the New England Milk Producers' Association.

Table 21. Retail prices of milk per quart delivered in Boston, 1922-1931.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	: Cents:	: Cents:	: Cents:	: Cents:	: Cents:	: Cents:	: Cents:	: Cents:	: Cents:	: Cents:	: Cents:	: Cents:
1922	13.5	13.5	13.5	12.5	12.5	12.5	13.5	13.5	13.5	14.5	14.5	14.5
1923	14.5	14.5	14.5	13.5	13.5	13.5	14.0	14.5	14.5	14.5	15.5	15.0
1924	14.5	13.5	12.5	12.0	12.0	12.0	12.5	13.5	14.5	14.5	14.5	14.5
1925	14.5	14.5	13.5	13.5	13.0	13.0	14.0	14.5	14.5	14.5	14.5	14.5
1926	14.5	14.5	14.5	14.5	14.5	13.5	14.5	14.5	14.5	14.5	14.5	14.0
1927	14.0	14.0	14.0	14.0	14.0	14.0	14.0	15.0	15.0	15.5	15.5	16.5
1928	16.0	15.5	15.5	14.5	14.5	14.5	14.5	15.5	15.5	15.5	15.5	15.5
1929	15.5	15.5	15.5	15.5	15.5	14.5	15.5	15.5	15.5	15.5	15.5	15.5
1930	15.5	15.5	15.5	15.5	14.5	14.5	14.5	15.5	15.5	15.5	15.5	13.5
1931	13.5	13.5	12.5	12.5	12.5	12.5	12.5	13.5	13.5	13.5	13.5	10.0
Data supplied by J. H. Bronson of the New England Milk Producers' Association.												

Note: During the period April 1, 1923 to September 4, 1927 some dealer's prices were 1/2 cent higher than the prices indicated above.

Table 22. Fluid milk sales 1/ to distributors by Twin City Milk Producers' Association, 1924-1932.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
: 000	: 000	: 000	: 000	: 000	: 000	: 000	: 000	: 000	: 000	: 000	: 000	: 000
: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds
1924	11,098	11,541	11,279	11,876	11,720	11,814	11,871	11,799	11,788	12,318	12,225	11,843
1925	11,958	12,265	12,572	12,710	11,720	12,572	12,210	12,570	13,052	12,492	12,421	11,861
1926	12,079	12,178	12,246	12,331	12,522	12,170	12,004	11,990	11,988	12,368	12,293	12,002
1927	12,246	12,485	12,775	12,474	12,005	11,912	11,769	12,111	12,737	12,438	12,608	12,100
1928	12,480	12,634	12,782	12,729	12,919	12,238	12,270	12,436	12,439	13,607	13,406	12,644
1929	12,785	12,942	12,968	13,086	12,820	12,437	12,432	12,684	13,053	13,495	13,433	12,980
1930	13,256	13,571	13,648	13,646	13,119	13,004	13,142	13,097	13,346	13,543	13,487	12,860
1931	12,961	13,277	13,201	13,268	13,821	12,812	12,993	12,162	12,563	12,308	12,724	12,065
1932	12,203	12,543	12,724	12,288	12,534	12,571	12,717	12,771	12,612	12,093	11,862	

Computed from data in National Cooperative Milk Producers' Federation, History Series No. 7. "Twin City Milk Producers' Association." Appendix Table IV.

1/ Adjusted to 30-day month.

Table 23. Retail prices of milk per quart
in Twin Cities, 1924-1932.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
1924	11-12	11-12	11-12	10	10	10	10	11	11	11	11	11
1925	11	11	11	11	11	11	11	11	12	12	12	12
1926	11-12	11	11	11	11	11	11	11	11	11	11-10-11	11
1927	10-11	11	11	11	11	11	11	11-11-12	12	12	12	12
1928	12	12	12	12	12	12	12	12	12	12	12	12
1929	12	12	12	12	12	12	12	12	12	12	12	12
1930	11	11	11	11	11	11	11	11	11	11-10-11	10	10
1931	10	10	10	10	10	10	10	10	10	10	10	9-10
1932	9-10	8-10	8-9	8-9	8-9	8-9	8	8	8	8	8	8

Data supplied by Twin City Milk Producers' Association.

1/ In the discussion in the text of this paper the reported change in price during December 1926 and January 1927 was not considered. The Bureau of Labor Statistics reported no change in the price for these months for St. Paul and no change occurred in prices paid to producers.

Table 21. Sales and retail prices of fluid milk in the Boston Sales Area.

Year and month	Class I	Milk reported	Estimated	Estimated	Retail	Retail	Class I
	sales	as percent of	total	average	delivered	store	price per
	of	estimated	Class I	Class I	per	per	cwt. of
	milk	total sales	sales	sales	quart	quart	3.7% milk
	000 lbs.	Percent	000 lbs.	000 lbs.	Cents	Cents	f.o.b. City
1934							
April	41,349	89.5	46,190	1,540	11	10	2.95
May	44,599	89.0	50,111	1,616	11	10	2.95
June	43,632	89.5	48,751	1,625	11	10	2.95
July	48,117	89.5	53,762	1,734	11	10	2.95
August	44,735	90.0	49,706	1,603	11	10	2.95
September	42,847	90.0	47,608	1,587	11	10	2.95
October	44,729	90.0	49,699	1,603	12	11	3.26
November	43,482	88.5	49,132	1,638	12	11	3.26
December	42,698	88.0	48,520	1,565	12	11	3.26
1935							
January	43,207	88.0	49,099	1,584	12	11	3.26
February	38,231	87.0	43,944	1,569	12	11	3.30
March	42,573	86.0	49,503	1,597	13	12	3.49
April	40,122	86.0	46,653	1,555	13	12	3.49
April to							
September				1,618	11		
October to							
February				1,592	12		
% change				-1.6	+9.1		
March and							
April				1,576	13		
% change				-1.0	+8.3		

Sales and Class I price compiled from reports of Market Administrator.
Retail prices compiled from reports of U. S. Department of Agriculture Market News Service.

Table 25. Sales and retail prices of fluid milk in the Detroit Sales Area.

Year and month	Milk		Daily		Class I	
	Class I	reported	Estimated	Estimated	sales	Retail
	sales	as percent	total	average	adjusted	delivered
	of milk	of esti-	Class I	daily	for sea-	price
		mated	sales	Class I	sonal Va-	per
		total sales		sales	riation ¹	quart
	000 lbs.	Percent	000 lbs.	000 lbs.	000 lbs.	Cents
1934						
April	35,448	90	39,387	1,313	1,275	10
May	37,853	98	38,626	1,246	1,217	10
June	35,957	99	36,320	1,211	1,172	10
July	35,496	98	36,220	1,168	1,180	11
August	34,344	98	35,045	1,130	1,137	11
September	33,731	97	34,774	1,159	1,175	11
October	34,776	98	35,486	1,145	1,128	11
November	33,419	98	34,101	1,170	1,195	11
December	33,671	98	34,358	1,108	1,143	11
1935						
January	34,804	95	36,636	1,182	1,231	11
February	31,948	98	32,600	1,141	1,146	11
March	35,868	98	36,600	1,181	1,153	12
April to June				1,257	1,221	10
July to February				1,150	1,167	11
% change				-8.5	-4.4	+10.0
March				1,181	1,153	12
% change				+2.7	-1.2	+9.1

Sales and Class I price: Compiled from reports of Market Administrator.

Retail prices: Compiled from reports of the United States Department of Agriculture Market News Service.

¹/ See test for index used.

Table 26. Sales and retail prices of fluid milk
in the Evansville Sales Area.

Year and month	:Milk re- :		:Estimated :		:Retail:		:Retail:		:Class I	
	:Class I :		:ported as :		:average :		:deliv-:		:store :	
	:sales of:		:percent of:		:total :		:daily :		:price :	
	:butter- :		:estimated :		:Class I :		:Class I :		:price :	
	:fat :		:total :		:sales of :		:sales of :		:per :	
	:sales :		:butterfat :		:milk :		:quart :		:city	
	:		:		:equivalent:		:		:	
	<u>Pounds</u>	<u>Percent</u>	<u>Pounds</u>	<u>Pounds</u>	<u>Cents</u>	<u>Cents</u>	<u>Cents</u>			
1934										
March	55,017	90	61,130	51,893	8.32	8.2				48
April	47,589	90	52,877	46,383		9				48
May	46,979	87	53,999	45,840	9					48
June	46,210	85	54,365	47,689	9	8-9				48
July	47,767	95	50,281	42,683	9	8-9				48
August	45,008	90	50,009	42,452	9	8-9				48
September	40,557	88.6	45,775	40,154	9	8-9				48
October	42,407	87	48,744	41,404	9.5	9-10				48
November	41,153	89	46,239	40,561	9.5	9-10				51.5
December	41,184	88	46,800	39,728	9.5	9-10				53
1935										
January	43,351	90	48,168	40,890	9.5	9-10				53
February	40,059	88	45,522	42,784	9.5	9-10				53
March	45,090	89	50,663	44,441	9.5	9-10				53
May to Sept.				43,764	9					
Oct. to Mar.				41,635	9.5					
Percent										
change					-4.9	+ 5.6				

NOTE: Percentage changes from March sales and prices were not calculated since sales during that month appear to have been unduly high.

Sales and Class I prices: Compiled from reports of Market Administrator.
Retail prices: Compiled from reports of the United States Department of
Agriculture Market News Service.

Table 27. - Sales and retail prices of fluid milk in the Grand Rapids Sales Area.

Year	Class I	Milk report-	Estimated	Estimated	Retail	Class I
and	sales	ed as per-	total	average delivered:	store	price per
month:	of	cont of es-	Class I	daily	price per:	cwt. of
:	milk	timated to-	Sales	Class I: quart	per	3.5% milk
:	:	tal Class I	:	sales	quart	f.o.b.
:	:	Sales	:	:	:	:
	Pounds	Percent	Pounds	Pounds	Cents	Cents
						Dollars
1934						
August	3,850,687	97.9	3,933,286	126,880	9	9.0
September	3,809,520	99.7	3,820,983	127,366	9	9.5
October	3,920,693	99.0	3,960,296	127,751	10	10.0
November	3,758,361	99.0	3,796,829	126,561	10	10.0
December	3,848,021	99.6	3,863,475	124,628	10	10.0
1935						
January	3,906,824	99.0	3,946,287	127,300	10	10.0
February	3,575,805	99.0	3,611,924	128,997	10	10.0
March	3,928,662	99.0	3,968,345	128,011	10	10.0
August &						
September						
October to:						
March				127,123	9	
				127,208	10	
% Change					+ 11.1	

Sales and Class I price compiled from Reports of Market Administrator.
Retail prices compiled from reports of U. S. Department of Agriculture Market News Service

Table 28. Sales and retail prices of fluid milk
in the Kalamazoo Sales Area

Year and month	:Class I :Sales of :Milk	:Milk.re- :ported as: :percent :of estima: :ted total:	:Estimated :total :Class I :Sales	:Estima: :ted av: :erage :daily :Class :I :Sales	:Retail :deliv- :ered :and :store :prices :per qt.:	:Class I :price per :cwt. of :3.5% milk :f.o.b. :City
	:Pounds	:Percent	:Pounds	:Pounds	:Cents	: Dollars
1934						
July	: 1,236,034:	98	:1,261,259	:40,686:	10	: 1.85
August	: 1,053,642:	98	:1,075,145	:34,682:	10	: 1.85
Sept.	: 1,043,354:	98	:1,064,647	:35,488:	10	: 1.85
October	: 1,078,968:	98	:1,100,987	:35,516:	10	: 1.85
November	: 1,062,866:	95	:1,118,806	:37,294:	10	: 1.85
December	: 1,145,373:	95	:1,205,656	:38,892:	8	: 1.85
1935						
January	: 1,211,198:	97	:1,274,945	:41,127:	8	: 1.85
February	: 1,144,550:	98	:1,179,948	:42,141:	8	: 1.85
March	: 1,196,868:	95	:1,281,294	:39,397:	10	: 2.00
July to	:	:	:	:	:	:
November:	:	:	:	:36,733:	10	:
December:	:	:	:	:	:	:
to Feb.:	:	:	:	:40,720:	8	:
%Change	:	:	:	:+ 10.9:	-20.0	:
March	:	:	:	:	:	:
% Change:	:	:	:	:39,397:	10	:
				: -3.2:	+ 25.0	:

Sales and Class I Prices compiled from reports of Market Administrator.
Retail prices compiled from reports of U. S. Department of Agriculture
Market News Service.

Table 29. Sales and retail prices of fluid milk in the St. Louis Sales Area.

Year and month	:Class I sales of milk	:Milk re-ported as percent of estimated total Class I sales	:Estimated total Class I sales	:Estimated average daily Class I sales	:Index of average daily Class I sales	:Retail delivered price per quart	:Class I price per cwt. of 3.5% milk f.o.b. city
	: 000 Lbs.	: Percent	: 000 Lbs.	: 000 Lbs.	: Per-cent	: Cents	: Dollars
1934							
April	: 16,824	: 99.8	: 16,858	: 562	: 102	: 11	: 1.85
May	: 18,091	: 100.0	: 18,091	: 584	: 106	: 11	: 1.85
June	: 17,928	: 100.0	: 17,928	: 598	: 109	: 11	: 2.00
July	: 18,229	: 99.7	: 18,284	: 590	: 107	: 11	: 2.00
August	: 17,482	: 99.8	: 17,517	: 565	: 102	: 11	: 2.20
September	: 16,167	: 99.7	: 16,216	: 541	: 98	: 11	: 2.35
October	: 16,923	: 99.5	: 17,008	: 549	: 99	: 11	: 2.35
November	: 15,676	: 97.9	: 16,012	: 534	: 97	: 11	: 2.18
December	: 15,769	: 99.8	: 15,801	: 510	: 92	: 11	: 2.00
1935							
January	: 15,952	: 99.6	: 16,016	: 517	: 94	: 11	: 2.00
February	: 14,709	: 99.5	: 14,783	: 528	: 96	: 11	: 2.00
March	: 16,783	: 99.9	: 16,800	: 542	: 98	: 11	: 2.22
Average				: 552	: 100		

Sales and Class I prices: Compiled from Reports of Market Administrator.

Retail prices: Compiled from reports of the United States Department of Agriculture Market News Service.

